

THE CAT.




ITS NATURAL HISTORY, VARIETIES,
AND MANAGEMENT.



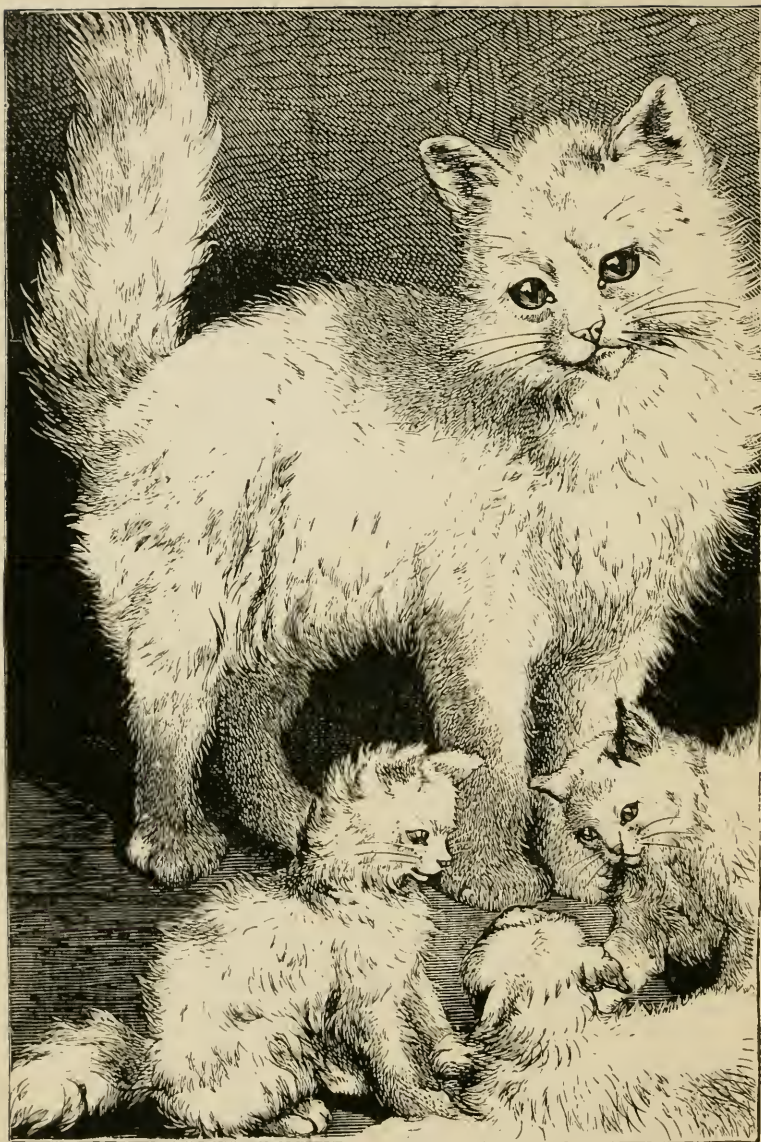
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WHITE CAT AND KITTENS.

Frontispiece.

THE CAT:

*ITS NATURAL HISTORY; DOMESTIC
VARIETIES; MANAGEMENT AND
TREATMENT.*

(WITH ILLUSTRATIONS.)

BY

PHILIP M. RULE.

*WITH AN ESSAY ON FELINE INSTINCT,
BY BERNARD PEREZ.*



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JOHN COLAM, ESQ.,

SECRETARY TO THE ROYAL SOCIETY FOR THE
PREVENTION OF CRUELTY TO ANIMALS,

This Book

IS RESPECTFULLY DEDICATED,
IN RECOGNITION OF THE NOBLE AND UNFAILING
DEVOTION DISPLAYED BY HIM IN ADVOCATING
THE CAUSE OF HUMANITY;
AND IN ACKNOWLEDGMENT OF THE AUTHOR'S
APPRECIATION OF HIS REGARD FOR AND INTEREST IN
THE SUBJECT OF THE
FOLLOWING PAGES.

CONTENTS.

CHAPTER I.

	PAGE
GENERAL CHARACTERISTICS	1

CHAPTER II.

GENERAL CHARACTERISTICS (<i>continued</i>)	10
--	----

CHAPTER III.

FOOD	31
----------------	----

CHAPTER IV.

ON THE MANAGEMENT AND TREATMENT OF CATS	45
---	----

CHAPTER V.

DOMESTIC VARIETIES	58
------------------------------	----

CHAPTER VI.

ON THE DISEASES OF CATS	80
-----------------------------------	----

CHAPTER VII.

ON THE DISEASES OF CATS (<i>continued</i>)	102
--	-----

ESSAY ON FELINE INSTINCT	133
------------------------------------	-----

PREFACE.

BEFORE sending forth this little book, I consider it my duty to request the attention of the patient reader to a few introductory and explanatory remarks. During some portion of the past year I contributed a series of short papers upon the cat to that most admirable monthly *The Animal World*. Through the kind and hearty manner in which the Editor brought the papers out from month to month, and also by the expressed desire of many

friends, I have been encouraged to reproduce the papers in the present form. Some slight revision has, of course, been found necessary ; but very little addition has been made, it being my desire to produce a small and attractive volume, with the hope that it may reach to many homes where the hints it contains can perhaps be of some practical service. Nevertheless, I hope there may be found enough interesting or instructive matter to excite in the mind and heart of some a deeper interest in or regard for an animal that too often is esteemed worthy of but slight attention.

I am indebted to Mr. Harrison Weir for his kindness in supplying me with a few particulars connected with the

organization of the first Cat Show, held at the Crystal Palace, in 1871.

In the last chapter the reader will see that I have made several quotations, somewhat at length : I have done so with the very kind and ready permission of the writer, MR. HAROLD LEENEY, M.R.C.V.S.

P. M. RULE.

MAIDSTONE.

THE CAT.



CHAPTER I.

GENERAL CHARACTERISTICS.

THE origin of the domestic cat (*Felis domestica*) is a subject about which there has been much conjecture and scientific discussion, but without any positive issue. Very long before the cat was kept in this country as a domesticated animal it was possessed by the ancient Egyptians in a tame state, and was, moreover, held in reverence by that remarkable and superstitious

people, being regarded sacred to the goddess Pasht. At death the body was embalmed with devout care, and specimens of cat mummies may be seen in the British Museum. The Egyptian cat (*Felis maniculata*) may, however, be regarded as probably the original source of our familiar puss. This wild cat is of a sandy-grey or tawny colour, and with more or less indistinct markings of the tabby character. It is of about ordinary size; the tail is in form somewhat like that of most of our cats, and the ears are largish and pointed in a slightly lynx-like fashion. It is supposed that domesticated animals spread from Egypt with the tide of civilization westward. I may here notice that, unlike the dog, the cat has

never been tamed by the savage races of mankind. But by the civilized, or even the semi-civilized, peoples of the world the cat is at the present day more or less valued as a useful mouser or as a cherished household pet. It is remarkable that at a time when the wild cat (*Felis catus*) was very abundant in England, the house-cat was unknown. It was evidently an animal of foreign importation, and so highly valued as a mouser as to have been protected by royal statute. The earliest record of the tame cat in this country is as remote as A.D. 948. Prince Howel Dda, or Howel the Good, enforced the very just but primitive fine of a milch ewe, its fleece and lamb, or as much wheat from the destroyer

or robber of a cat at the Royal granary as would cover it to the tip of the tail, the animal being suspended by that member, with the head only touching the ground.

As the domestic cat in different parts of the world will breed occasionally with the wild races of the locality, and as cats are conveyed from country to country, it is probable that our cats are of somewhat compound pedigree. It is considered probable that our fine English tabbies have a trace of the British wild-cat blood in their veins, although it may be obscure. The domestic cat is not regarded in zoology as the typical form to represent the beautiful group known as the *Felidæ*, or the cat family, as might

naturally be supposed ; and it might have justly been so. But the animal chosen as the generic example is the common wild cat, and therefore known in science as *Felis catus*, *felis* being the generic title and *catus* the specific name, which every reader will understand to signify cat. It will be beyond the scope and aim of this chapter to describe all the known distinct species of wild cat. In describing the true cats, such as the Pampas cat, or the Colocolo of America, the Chaus, or the Serval of Africa, the Viverrine, or the Leopard cat of India, our subject would lead us on from these and other "tiger cats," as the Ocelot, and the Riman-Dahan, without power to define a clear line of distinction, up to the leopards,

and finally to the “King of Beasts” himself. Of all these *Felidæ* there are upwards of half a hundred distinct species known, to say nothing of the permanent varieties—which, with regard to domestic animals, are termed “breeds”—and the casual “sports,” and variations of colour, etc. But the true wild cat (*Felis catus*) is deserving of notice, being the only form that is a native of this country, and often termed by us the British wild cat, although now almost totally extinct on our island. Its last haunt here is in the remote parts of Scotland; and so scarce has it become, that its existence, even there, is now somewhat doubtful. But it is still now to be found, with but slight local variations, on the con-



WILD CAT.

To face p. 7

continent of Europe and Northern Asia, and is, therefore, also known as the European wild cat. It is not found very far north, and neither in Norway nor Sweden ; there the lynx reigns supreme. The wild cat is a fine animal, of larger growth than the cat of our familiar acquaintance, and stands tall. It is a strong, muscular, well-built cat,—a perfect tabby,—and so fierce an animal as to have been justly termed the “ British Tiger.” An adult male measures about twenty-eight inches in length from the nose to the root of the tail, and the tail is about thirteen inches, which is proportionately short, and it does not taper at the end, as does that of our domestic cats, but is about the same thickness throughout, resembling some-

what that of the Serval. When the animal is excited, and the tail enlarges, after the manner of all cats, it presents a splendid brush.

In country places, where rabbits are abundant,—and, we may add, the smaller, but not less destructive, rodents, and a variety of feathered game,—the barn-door cat is sometimes tempted to abscond and take to a romantic and semi-wild life in the woods. Kittens born of such parents have no desire for the domestic hearth, and are wild and suspicious to a degree. Were it not for the vigilance and unremitting persecution of gamekeepers and others, which has robbed our land of the noble *Felis catus*, in common with many other rare and interesting creatures, it is

probable that but very few consecutive generations would suffice to produce a truly wild race.

CHAPTER II.

GENERAL CHARACTERISTICS.

(Continued.)

A SHORT time ago I had two kittens which were born in the Zoological Gardens, Regent's Park, and bred between the domestic tortoiseshell and the British wild cat, that have for several years occupied together a cage in the winter aviary. This crescent-shaped row of cages, although originally an aviary, has for some years been occupied by animals of a decidedly bird-fancying character. There the animals in question may have been seen,

and in an adjoining cage a specimen of the Viverrine cat—so named from the somewhat civet-like form of the muzzle. But it is a true cat, every inch, and bears every cat in countenance by its love of fish. Being most unusually adroit at capturing fish from shallow water, it is commonly named the Fishing Cat. The specimen I allude to was brought from India by the Prince of Wales, and graciously presented to the Zoological Society. These cages contain also other animals of interest, such as the Civet, Poradoxure, etc.* But to

* The Zoological Society has now fitted up the building, which was formerly the Reptile House, with new cages, and to this "Cat House" the specimens above alluded to have been removed, together with other forms which were kept within the "Small Mammals' House," such as

return to the kittens. When only able to crawl, as I examined the litter, the little things spat most vigorously, for probably they had not before seen anybody in the cage except their keeper. The two I selected were a red tabby and a tortoiseshell. The red tabby was a male, as red tabby cats generally are, and he decidedly resembled his father, if not in colour, in disposition and temperament. I took them from the litter at the early age of nearly seven weeks. The contrast between their behaviour and that of tame kittens was most remarkable. At the slightest surprise or displeasure they would spit with wide-open mouth and a display of ivory

the Pampas Cat, the Ocelot, the Geoffroy's Cat, Serva, etc.

fangs in a most threatening manner. When I gave them milk, they would in a very unpolite fashion growl together. They never ate near each other, but pouncing upon their meat and carrying it to a far corner apart, would growl in a most warning tone, and answer back again and again till the last morsel should be consumed. On one occasion they had quite a desperate tug of war over the same piece of meat, and it was with some difficulty that I could part them, for fear of using too much force and hurting their young teeth. But when not feeding, the tortoiseshell became not only docile, but most affectionate and pleasing, in her little ways. She would fondle and purr in a manner that won the affection of my heart. On

the other hand, the tabby was, at the best, passively composed, but always watchful, and never certain in mood. I can hardly say which of the two I prized most. In the one I admired the manifestations of its inborn nature, and would on no account check or discourage such signs of high blood. Towards the other I felt there was a mutual and spiritual bond of affection, which I can better conceive than describe. Dryden's lines upon a tame leopard express very nearly my feelings respecting these two little beasts (see page 21). Unfortunately, the kittens died very suddenly, and at the same hour, after a short career of three months. There is reason to suspect that poison was the cause of their untimely end. Nothing

now remains but the stuffed skins, mounted in admirable style, under a glass case.

Probably the veneration with which the Egyptians regarded the cat was in no way diminished by the probable utility of their revered favourites in keeping under the increase of such remarkably prolific and fast-growing rodents as are mice and rats; and it is reasonable to suppose these little animals must have been harmful in the vast stores of grain which are recorded in ancient history. Pussy's valuable qualities as a mouser are to the present day too well known to need much comment. A friend of mine told me the other day that once, when he removed to another house, and had also

deposited his favourite cat, with the usual precaution of buttering paws, and consolation of a more solid nature in addition, the servant, on entering the kitchen in the morning, found fourteen mice lying dead on the hearth-rug, most of them decapitated. The usual preference which cats have for the heads of their prey is remarkable, and has been noticed in both tame and wild animals. One of the most noticeable characteristics of the cat kind is the silent tread. Even the foot-fall of the huge tigers, as they pace to and fro in their roomy cages or in their open-air enclosures at the Zoological Gardens is hardly to be heard. For not only is the cat a digitigrade animal, walking absolutely "tiptoe" in the

most perfect manner, but the toes are furnished with a most elastic membrane, constituting what are commonly called pussy's "pads." She is thus enabled to skulk stealthily in search of her desired prey, and can on all occasions move with that unobtrusive grace and silent ease peculiarly characteristic of her race. The retractile construction of the peculiarity sharp claws is also a beautiful adaptation to the requirements of these Nimrods of creation. Generally these useful weapons are held back, nicely sheathed and safe from harm. They are readily, however, protruded at will when required for offensive or defensive service, in holding secure an unfortunate victim, or as hooks to assist in climbing trees, etc.

The senses of the cat are all highly developed. That of hearing is most acute. The sense of smell is not so acute as in the dog and some other animals—at least, it is assumed so; but it is quite evident that the ear and the eye are put to the best service by the cat. But dirt and bad smells are much disliked, while, on the other hand, there is a remarkable partiality for some smells. Cats appear to enjoy the perfume of many flowers, and their fondness for the odour of cat-mint or valerian is remarkable. As may be noticed by the prompt, unerring manner in which a cat will dart at a mouse or any small moving object in almost total darkness, she has the power to see near objects without the light required by

ourselves and most animals. Absolutely total darkness is evidently not advantageous to pussy's vision, and the assertion that the cat can see better in the dark must not be regarded in an abstract, but in a comparative, sense. The pupil of the eye has the round shape, as in ourselves, only during darkness, when it is dilated so as to receive every ray of light available. By day, on the other hand, when there is more light than the eye requires, the pupil contracts to an ellipse, or, in the strongest light, to a mere line. This peculiarity is absent in the lion and tiger and a few others. A peculiarity in the cat and some other animals may be noticed in the highly-developed bristles, commonly called "whiskers,"

but more appropriately termed "feelers." These are not, as some may suppose, only common hairs of larger growth, but are deeply implanted, having large swollen roots, somewhat in the form of young onions, and are connected with highly sensitive nerves which communicate with the brain. By means of these bristles the cat is enabled to feel its way the more stealthily, avoiding the clumsy disturbance of surrounding objects that might impede its progress.

It will be seen by the foregoing brief description of its leading physical characteristics that the cat is, of all animals, the most perfectly and beautifully formed for the fulfilments of the instincts and requirements of its nature. The silent, soft tread of the velvet paw,

with the finely pointed and carefully preserved claws, the terrible fangs, the keen eye, and the light, easy, soft, yet powerful and unerring, action of the whole body—all these render the cats, from the great Bengal tiger downwards, the most charming and graceful creatures in animated nature.

The panther, sure the noblest next the hind,
And fairest creature of the spotted kind ;
Oh, could her inborn stains be washed away,
She were too good to be a beast of prey !
How can I praise or blame, and not offend,
Or how divide the frailty from the friend ?
Her faults and virtues lie so mixed that she
Nor wholly stands condemned, nor wholly free.

But there is yet another physical peculiarity worthy of passing notice ; viz., the remarkably loose skin. This is connected with the flesh by a layer

of very loose fibres. The cat's loose skin serves her well on many occasions as a shield of protection, especially when scuffling with her neighbours—an occurrence which will sometimes take place. This peculiarity may be occasionally seen well exhibited in the jaguars and other great cats at the Zoological Gardens, more especially when they are young and sportive. To see the powerful manner in which these animals embrace each other with their great hooked claws may cause some apprehension that serious consequences are about to result. If the skin were tightly fitted to the body, as with the horse, hog, ox, and other herbivorous animals, the result of such violent scufflings would be very serious. But, as may be seen, the animals do not

get good hold of each other, as the skin is dragged round with the claws, and the hold is lost.

The following account of the sagacity of a young black-and-white tom-cat, which occurred about twenty years ago, is, I think, worth relating as illustrative of the retentive memory and the remarkable prescience which many cats appear to possess as a peculiar mental endowment.

The house being covered with corrugated iron, and the spaces formed by the corrugations where the roof met the walls not being stopped, but left open to admit air into the roof, the whole space of the unused interior of the roof was a favourite breeding-place for countless broods of sparrows and star-

lings. The roof was accessible to human and other intruders by a small trap-door above the lobby at the top of the staircase. It was a square house, of good dimensions, but of only two stories. I have described these particulars in order to be better understood in narrating the circumstances.

It so happened that we wanted some small boards which had been stored away in the roof, and we entered by the aid of a light ladder; and it also happened that puss, unobserved, followed the example of the man-servant and myself, but from quite another motive, prompted, doubtless, by the chirping of the birds, it being early summer. As soon, however, as we could get Tom down, we closed the trap, and returned

the ladder to its proper place. About a month afterwards, I had to resort to the roof again, and accordingly went for the ladder, which was kept against a fence at another part of the premises. As soon as I brought the ladder into the back yard, and laid it on the ground, in order to unfasten a door leading straight into the hall, Tom became suddenly most excited with delight. He must have seen the ladder often since he entered the roof by it, as it was used for various purposes, such as lighting the outdoor lamps, window-cleaning, etc. But now he at once conceived, by a most sagacious inference, my intention. He paced about the yard, close to the ladder, tail erect, and talking as only an earnest and

happy cat can talk. Immediately I took the ladder in and hoisted it through the well of the staircase, he scaled it like a squirrel, and was waiting for me to follow upstairs. As soon then as I drew the ladder up, and raised the trap with the end of it, and while it was in my hands, he clambered up and out of sight. Before going up myself I thought it best to await Tom's return, and there was but little time lost before he came down, stile by stile, with a sparrow in his mouth. Then I at once brought down what I wanted, closed the trap, returned the ladder to its place, and the birds afterwards enjoyed undisturbed safety and peace.

There was, about the same time, a tortoiseshell cat at the house of a

relative which became much attached to me. Her affection was so strong that she even knew my knock at the front door from that of anybody else. On hearing my knock, she would speak in her loving and expressive tone, and meet me in the hall. She was an adult cat, the mother of many kittens, and yet, notwithstanding the cares of life, she delighted in a most remarkable little eccentricity of her own. It was the peculiar habit of taking the pendent lobe of my ear into her mouth and sucking it with charming avidity. The peculiar sensation felt under the operation, though not unpleasant to me, was not enjoyed or tolerated by other persons, and she was sometimes rather rudely repulsed when trying to practise upon strangers.

Those who admire and observe the habits of cats may have noticed that when two are snugly engaged together in dressing their fur, they are often mutually pleased in paying particular attention to the face and ears of each other. A short time ago I was pleased and amused with two charming kittens upon my knee. They were each equally resolved to lick the face and ears of the other, and tried hard to prevail. Eventually, one became resolute, and placing her left arm round her brother's shoulder and her right paw upon his cheek, she licked and nibbled into his short, round velvet ear (for they were little over two months old at the time), to her utmost satisfaction and his evident enjoyment.

As is well known, the cat often evinces to a remarkable degree an instinctive power, if such it may be called, of finding its way back to a home from which it has been removed. Some years ago, an officer of the Royal Marines, upon promotion, removed from his private quarters at Stonehouse, Plymouth, to Portsmouth. Having a favourite cat,—a black male of about twelve months old,—he resolved to send it to Portsmouth by rail in a hamper. It arrived at its destination safely enough, but on the afternoon of the day following, which was Sunday, it was missing, but was actually found in the garden of its beloved home at Stonehouse on the evening of Wednesday in the ensuing week. It was

at once recognised and taken charge of by a kind neighbour, who knew the cat well. Considering it went by train, secured in a hamper, it is difficult even to conjecture by what means it was guided homewards, a distance of about a hundred and thirty miles as the crow flies, and within ten or eleven days. I was living at Stonehouse at the time this strange occurrence took place,—about nineteen years ago,—and narrate the particulars from memory.

CHAPTER III.

FOOD.

ALTHOUGH the cat is in many respects so hardy an animal as to have the popular reputation of possessing nine lives, we must bear in mind that puss is not of such an iron constitution as to be entirely independent of all care. No animal better repays its owner for the attention rightly bestowed upon it than does the cat. Pussy's wants are not many, and are very simple indeed. It is the duty of every owner of pet animals first to ascertain the nature and requirements of his charge, and

then to use that knowledge with thought and right feeling. Subsequent experience also proves a good teacher, and especially so when it is supported by previous knowledge.

Being normally a purely carnivorous creature, the cat requires to subsist principally upon animal food. But, nevertheless, owing to its long established association with mankind, the domestic cat has acquired a constitutional capacity for subsisting upon a somewhat miscellaneous bill of fare. Consequently, the intestines of the tame cat are said to be slightly longer and somewhat wider than in the wild races—the latter requiring a rather less lengthened process in digesting the simple and highly nutritious diet which

instinct teaches them to select. But still our puss is, as God created her, a perfect beast of prey. There is no complicated stomach, as in the ox, antelope, sheep, and other ruminants—no perfect grinders, like mill-stones, as in the mouth of the horse, elephant, hog, etc. The dentition of the cat, as also that of the lion, leopard, ocelot, lynx, and other *Felidæ*, is beautifully adapted by the all-wise Creator for holding, tearing, or devouring their living prey. On inspecting the teeth of a cat, the four large, powerful, and sharply pointed canine teeth, or fangs, will naturally attract attention. With these the prey is seized, and is usually carried, or the piercing and fatal bite is effected. It will be noticed, by the

way, that a cat, if possible, always carries a mouse or a bird quite away from the spot where it may have been captured. The attack is, however, made with the claws first, and the cat does not seize with teeth only, as does the dog. At the front, between the tusks, will be seen six small incisors, and back, behind the tusks, on fangs, are the molar and premolar, or crushing teeth. The dentition of the cat is as follows (the letters *i*, *c*, *p*, *m* signifying incisor, canine, premolar, and molar):—

$$i \left\{ \begin{smallmatrix} 3-3 \\ 3-3 \end{smallmatrix} \right. \quad c \left\{ \begin{smallmatrix} 1-1 \\ 1-1 \end{smallmatrix} \right. \quad p \left\{ \begin{smallmatrix} 3-3 \\ 2-2 \end{smallmatrix} \right. \quad m \left\{ \begin{smallmatrix} 1-1 \\ 1-1 \end{smallmatrix} \right. \quad 30.$$

The milk dentition in the kitten is the same as to number, with the exception of the molars, which are absent,

and appear only as permanent teeth. The incisors appear between two and three weeks after birth, and are followed by the canines and molars, which are all cut by the time the kitten has attained the age of six weeks. They are shed, and replaced by the permanent teeth, after the seventh month. Therefore the teeth in a kitten are twenty-six in number. It may be easily noticed that the teeth of the lower jaw bite within those of the upper. The jaws are so articulated as to allow of up-and-down motion only, and accordingly the cats and other carnivora are unable to grind their food by a sideway motion, as we do ourselves, and as is most noticeable in a horse when feeding, but crush and

chop the flesh and bones upon which they feed by a jerking motion of the head.

We are all familiar with the rough nature of the tongue—a peculiarity in the cat and all her kind. It is in dressing the exceedingly beautiful and sleek fur that the tongue is of important service, as comb, brush, and sponge in combination.

The domestic cat being almost a purely carnivorous animal, to say the least, requires food of a character congenial to the instincts of her nature. It is difficult to state in measured terms the needful quantity of a cat's daily allowance. The amount may be regulated by observation, right judgment, and experience.

It is not so needful with cats that live in the country, especially at a farm, where mice of different kinds and other small game are plentiful, and a liberal supply of milk, to feed them largely upon meat; but under less favourable circumstances the common house cat often suffers much privation. Where there is a large family, and but one cat or so, there may generally, with a little thought, be odd pieces of various kinds gathered together sufficient to meet pussy's wants. But in a small household, where limited and strict economy is rightly observed, the poor cat may fare but badly. Under such circumstances, in order to maintain a vigorous, happy, and respectable cat, it will be found needful to buy cats'-meat

of some sort. For this purpose boiled horseflesh is commonly supplied, the peculiar call of the cats'-meat man being a well-known sound in our large towns. There is, however, but slight risk of animals fed upon this meat becoming diseased by eating the flesh of unhealthy horses. Horseflesh is to be recommended as convenient and cheap, and cats are also very fond of it. When in a state of putrefaction it is most unwholesome, and if those who buy horseflesh will be a little careful in the selection of it, the horse-slaughterer, or "knacker," will be accordingly regardful of the condition of the meat he supplies.

Bullocks' or sheep's lights are excellent, especially the latter. These

are usually boiled, as they will then keep longer; and when given largely, are better so prepared. But they are good raw, occasionally. Too constant and abundant feeding upon raw lights, or even raw flesh of a more solid kind, especially if not quite fresh and healthy, is liable sometimes to scour the cat. The poor animal, however clean and regular in its habits, may then become offensive in the house. Boiled lights are very unsubstantial, and can be given liberally. Raw meat, however, in moderation, is often good for a cat, especially where there are no mice or other game, and it tends to improve the spirit of the animal.

Cats generally prefer mutton to beef, but they will not touch fat meat, unless

they are famished, and it is most unsuitable, and should never be offered. Fish is exceedingly good for a change, and the cat's love for such light and cooling diet is well known; and as to rabbit or hare, there can be no greater treat. We may also say the same of feathered game.

An adult cat will thrive well with one feed per day, in addition to a little good, pure milk in the morning. To this a little sweet, stale white bread may be added. The rest can be left to chance.

But I may here warn the owner of a pet cat against over-feeding. It is well to be regular as to the time of feeding, for this reason: an animal that is fed at all hours of the day will be

always expecting, and always asking and looking in a very expressive manner, and it, of course, receives the attention of its affectionate guardians; whereas, an animal that is regularly fed will enjoy its food with hungry relish, and will not at other times be over-troublesome. Two errors have to be guarded against in the feeding of animals generally, and the cat in particular: careless neglect or grudging attention on the one hand, and, on the other, thoughtless tampering and weak-minded indulgence.

A supply of pure water should be kept within the cat's reach. Although of by no means a thirsty nature, there are times when water will be sought after, as during very dry and hot

weather, or after food of a thirst-producing character; and we never know what a cat may pick up.

Notwithstanding that the generality of cats are very badly attended to, I may here remark that large, strong, high conditioned animals are much benefited by an occasional fast. This remark I make, however, with caution, and rely upon the good sense of the reader.

Be careful never to feed in a stale dish, and always give milk in a well washed saucer or other vessel. Never let what the cat may leave stand about, but dispose of it otherwise. The savour of onion is very distasteful to all cats, and they will often loathe good meat that is strongly seasoned with it.

It may here be observed that the cat is even sometimes of a slightly insectivorous propensity. Young, sportive cats, more especially, have much amusement in playing with cockroaches, and sometimes eat them. But they appear to eat them more from accident or idleness than from desire; much the same as a schoolboy will eat acorns. Occasionally, pussy will be fortunate in catching such rare game as a cricket. Flies are not easily caught, except in a window; and they are said to make cats thin. Beetles, I think, do a cat no harm. Lions and other beasts of prey are known to feed largely upon locusts, which occur in such vast swarms in the great African continent.

It should be observed, respecting

milk, that for animals generally, as for ourselves, it is decidedly improved by boiling. Pussy will, therefore, readily partake of bread and milk prepared for the family breakfast or supper. And she will not often refuse a little plain baked rice-pudding, or other simple preparation containing milk as the principal ingredient.

CHAPTER IV.

ON THE MANAGEMENT AND TREATMENT OF CATS.

HAVING briefly considered the general feeding of our fireside favourite, we may proceed to discuss the consideration of its proper care and treatment during the different stages, conditions, and circumstances of a life that can be made happy or wretched at the mercy of those who undertake, or may pretend to undertake, to be its possessors and guardians.

To begin towards the beginning, we may suppose that a charming little

kitten, of about ten or twelve weeks, has been deposited in its new home. Being an innocent, simple, happy tempered little creature, it will make itself at home in so pleasing a manner as to gain the approval, if not the affection, of every kind-hearted person in the house. Supposing it to be a well conditioned little animal, of good parentage, and from a comfortable home, it will probably be found to prove itself a clean and nicely behaved little innocent, if rightly managed with care and quiet attention. No animal is instinctively cleaner in its habits, in every way, than is the cat. It is this natural virtue which renders pussy so generally a favoured inmate of the household. As is well known, cats are

guided by a peculiar instinct to scratch up earth for the purpose of hiding their excrements. Where there is no access to a garden, they will resort to cinders or coal-dust, and although not, perhaps, desirable, will meet with better approval than the carpet. For the accommodation of a kitten indoors, it is a good plan to have a large flower-pot saucer—the larger the better, but not less than fifteen inches in diameter—kept in some suitable corner, with a little clean garden-earth or sand in it. It need not contain much earth, and it can be changed at will; but should not be allowed to become so foul as to offend the cat. This plan, once tried, will be found to answer well.

Week by week the kitten increases

in strength and vivacity. Do not discourage or check the young cat in its sportiveness, although it may be a little too rough in its vivacious evolutions. The most skittish kittens usually make the best cats. They are generally the delight of young children, and make charming playmates when treated gently, and not simply made toys of. Although cats differ in disposition very considerably, they are alike as regards a common dislike for noise and confusion, and the little folks will sometimes require guidance and instruction in their treatment of most pet animals. The cat is an animal of naturally a very strong will, being most impatient of control, and the kitten that is allowed quietly to enjoy unmolested

freedom of purpose in its queer little ways and freaks will develop, under good treatment, into a noble spirited and well behaved cat.

The kitten will, of course, be kept indoors at night, and as it grows, continue the good practice. It is a common custom—but, for many reasons, a very bad and cruel one—to habitually shut the cat out of the house at night. If you wish pussy to have a good, sleek, unsoiled coat,—to be a nice pet, not to be dull or asleep all the day,—and, especially, if you wish the house kept clear of mice, keep her in at night, and let her have, as much as may be convenient, the range of the premises. Persons who are quite ready to complain about the nightly disturbance

caused by cats in the back-gardens of their neighbours' houses are apt to forget that their own gentle pet may possibly be a leading performer in the nocturnal concert. A cat will play truant occasionally, but this will not often happen with a well cared for animal, which will prefer human society and the comforts of a good home on most occasions. It is well, however, to let the cat out of doors the very first thing in the morning.

There is seldom any thought or attention given to the breeding of the cat. This is left to nature, and with very natural result. But, notwithstanding, those who possess a cat of a choice sort, and wish to continue or improve the strain, or to effect a cross,

can do so with less trouble than may be supposed to be needful. Watch the cat well, if a female, and upon the first indication of the well-known sign be very careful to prevent her from straying in the least. Then introduce the approved "tom," and allow them to remain together—say for a night—in some outbuilding or spare room. He can afterwards be returned with thanks ; but be careful to keep "kitty" quite safe for more than a week afterwards, or as long as may be considered needful. All will then be right, and there need be no more thought or care upon the subject. At the completion of a term of fifty-six days, the litter may be expected. As is well known, kittens are born blind, and remain so

till about the ninth day. The domestic cat is more prolific than the wild species, having often three litters in the year. A cat of mine, some time ago, gave birth to twenty-two within twelve months. The age of sterility commences about the ninth year. The wild cat reproduces about twice a year, and the period of gestation is said to be as long as sixty-eight days, which may be correct, and if so, is remarkable.

It is usually expedient to destroy some of the new-born kittens—of course, the least handsome and promising of the litter. But it is exceedingly cruel to rob the fond mother of all her little ones. When thus deprived, a cat often suffers exceedingly, as may

be evident by the symptoms which ensue; and her lamentations are painful to hear—much too expressive to be misunderstood. Always retain one, if not two or more, of your selection—the whole litter, if you really wish it. If there be a numerous litter,—say, five,—it is better not to remove all at once, but two the first day and two the next day; or, better still, a third kitten the second day, and afterwards the fourth. Take them as much unobserved by the mother as possible. Drowning is the usual and probably the simplest and best method of ending the brief existence of the little creatures; but it must be properly and completely done. Have ample depth of water in a pail or other

vessel, with the addition of just enough hot water to take off the chill—not more. They must be put completely under, and on no account allowed to rise for one second. If you have nerve and patience, simply keep them down with your hand till they cease to move, or else place some article above them in such a way as to serve effectually. They must remain under water for some time, even though life may appear to be extinct. Many years ago, I learned by sad experience the danger of being too expeditious in executing this duty. In drowning a large, powerful animal, care and tact are especially required. Be quiet, cool, prompt, and firm.

The loving and devoted attachment

to her offspring is remarkable in the cat. She will face any danger in defending them, and will, above any other animal, often delight to foster kittens not her own, and has been known to cherish and rear the young of animals of quite a distinct kind, such as puppies, the young of the squirrel, rat, hedgehog, etc. The following touching incident took place at the destructive fire that burned down Lusby's Music Hall, London, on the 20th January, 1884. I give the account as related in *The Animal World* for March, 1884 :—

“ Mr. Crowder, one of the proprietors of the hall, possessed a favourite tabby and tortoiseshell cat, which was well known to the frequenters of the hall.

The cat had a family of four kittens, which she was allowed to keep in a basket at the rear of the stage. Soon after the fire was discovered, the cat was seen rushing about frantically. She several times attempted to make her way down the corridor in the direction of the stage, but each time was beaten back by the smoke. Presently she reappeared with one of the kittens in her mouth. This she laid carefully down at her master's feet in the small hall which the fire had not touched. Again she rushed through the smoke, and again reappeared with a kitten, and this manœuvre she repeated the third time. She was now apparently half-blinded and choked by the smoke she had passed through, and it

was thought that she would be content; but she seemed unable to rest while she knew that one of her kittens was still in danger; and, giving a look at the little struggling group on the floor, the cat, evading some one who tried to stop her, once more dashed down the corridor towards the seething mass of flames, which by this time had enveloped the stage and the lower end of the hall. Her return was anxiously awaited, but she did not come back. Afterwards, when examining the ruins, some of the firemen came across the charred and blackened remains of the mother and kitten, lying side by side where the fire had overtaken them."

CHAPTER V.

DOMESTIC VARIETIES.

IN the estimation of persons who have no appreciation of the beautiful in animal life, a cat is a cat, and nothing but a cat. I have often observed some surprise expressed by visitors at a large cat-show on seeing an assemblage of so many different sorts of cats. These same persons had often seen examples of every class before—in the houses of friends, in shops, gardens, etc., etc.; but the beauties had been passed unobserved. At a good show, where

well-selected specimens of the common house cat are arranged in line, and classed according to colour, sex, etc., a novice cannot but be surprised at the unexpected sight of so interesting an array of feline beauty. At the leading shows the animals are arranged in two main divisions; viz., long-haired and short-haired cats. These two divisions are again sub-divided into he-cats, she-cats, kittens, and gelded cats. The he and she-cats are again divided in classes according to colour, as tortoiseshell and tortoiseshell and white, brown, blue or silver, and red tabby, tabby and white, and spotted tabby; also cats of unusual colour, and Manx, or tailless cats. A brief description of the characteristic points of the dif-

ferent classes, as at the Crystal Palace, will be given in this chapter.

The 13th of July, 1871, was a memorable day in the cat world, and an eventful one at the Crystal Palace, for it was then and there that the very first cat-show took place. Mr. Harrison Weir, F.R.H.S., the well-known animal painter, has the honour of being the originator of these interesting exhibitions; and he has kindly placed at my disposal a few particulars respecting the primary arrangements. He suggested the idea to Mr. Isaac Wilkinson, manager at that time, drew up the schedule of prizes, the way in which the classes were to be judged, the amount of prize-money, etc.; and he also acted as judge. The show was

put under the management of Mr. Wilson, of the Natural History Department, who very ably conducted it; and the whole affair proved a gratifying success—so much so, that Mr. Weir received the thanks of the Directors, and a very handsome, large silver tankard, with suitable inscription. So great a success did the exhibition prove, that it was immediately decided to repeat it later in the year.* The show was also held twice in the year following (1872), and has been continued annually ever since. “My idea,” Mr. Weir remarks, “for holding a show was that the cat was a truly useful domestic

* The number of visitors admitted on the occasion of this one-day show amounted to the grand total of 19,310.

animal, though a much neglected one, and if I could only induce the multitude to take a pride in their cats, and select them more for their beauty and ultimate value in the market, I might achieve a good result in the way of kindly treatment to an animal much neglected by some."

The great success and the good example of the Crystal Palace show was very naturally soon followed up at Edinburgh, Birmingham, Glasgow, and many large centres of population, and now even the smaller provincial towns can boast an annual exhibition of feline favourites.

The varieties of our short-haired cat will now deserve our attention.

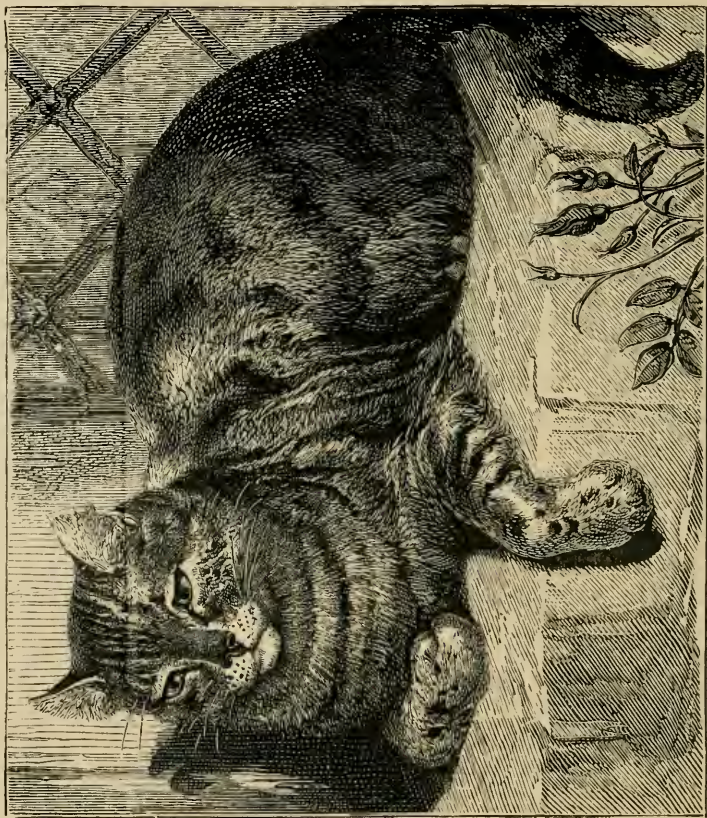
Tortoiseshell.—Cats of this breed are

also sometimes called Spanish cats, and display a very marked contrast to the tabby varieties. The general colour is a kind of reddish tawny, or sandy, more or less thickly covered with blotches or dabs of black. So very irregular are the markings in these cats, that some individuals are very handsome creatures, and some, on the other hand, are far from prepossessing in appearance. Tortoiseshell cats are of somewhat smaller growth. But, in our comparative estimate of size, we are apt to be somewhat misguided, from the fact that all the tortoiseshell cats we meet with are she-cats, and can never attain the large size of the tom tabby cats, with which they are often compared. The tortoiseshell male cat is a treasure often sought

for, but very, very seldom found. Ever since the commencement of the shows just alluded to, there has been only a single specimen of the pure tortoiseshell male cat exhibited. Experiments have been tried in every way to breed to this colour, but without the desired result. But tortoiseshell and white liecats are occasionally to be seen. At the last Crystal Palace show there were two very fine toms of this description.

Our common favourites, the tabby cats, are, on the whole, the handsomest and the best. They are of every shade, but three distinct varieties are known as brown, blue or silver, and red.

Brown Tabby. — Although there is considerable individual variation in these cats, the general characteristics are as



TABBY CAT.

To face p. 65.

follows:—The ground-colour should be a deep, rich brown grey, striped with black. These markings converge from a central stripe of black, more or less broken, which follows the line of the spine, a mark in some degree characteristic of the whole feline race. The tail is barred with black, and a line of narrow stripes runs from the forehead, passes between the ears, and, passing down the neck, it disappears. The face is adorned with little swirls and stripes, so disposed as to give the general expression of the countenance that air of satisfaction so peculiar to puss. The under parts of the body may be of a paler colour, but no pure white is seen in a true tabby tom-cat. The tip of the nose, the lips, and the pads of the

paws are to be desired of a dark colour. One, if not two, bold swirls of black across the chest are to be looked for in these cats. They have been appropriately termed "the Lord Mayor's chain." These tabby cats are generally large, portly animals, if properly reared, very intelligent, and often most affectionate. The females are most gentle, and the best of mothers.

Blue or Silver Tabby.—This is a pale variety of tabby, which is sometimes beautiful. The ground-colour is a silver grey, with the stripes of a darker shade.

Red Tabby.—In bold contrast with the blue, these fine cats are of a bright sandy yellow, with the usual markings of a deeper shade. Some of these cats

are of very good colour, so much so as to be distinguished by their proud owners under the very aspiring title of "Orange Tabby." These cats, in the main points, are like the brown tabby. The fur should be short, but full and thick, the ears rather short and round. In the tabby breeds the female is seldom without white, which generally appears upon the muzzle, throat, paws, etc. This is, most remarkably, a characteristic in the red tabby cats, a female of that colour without white being almost as rare a zoological curiosity as the wonderful tortoiseshell tom.

Spotted Tabby cats are distinguished from the others by having, instead of the usual stripes or cloudings, a pattern of quite a distinct type. The markings

are broken up into small, well-defined spots, being more or less elongated upon the sides, transversely to the stripes along the back.

In the class of spotted tabby he-cats at the Crystal Palace there might have been seen a specimen named "Coppa," which was justly awarded first prize. The owner of this cat, Mr. J. Scott, has kindly favoured me with the history of Coppa, which is of some interest when regarded zoologically. The father of Coppa was a leopard-cat (*Felis Bengalensis*), picked up at an East Indian coffee plantation, and brought to England by a gentleman, who handed it over to Mr. Scott. He kept it for two years, and bred ten kittens by two mothers. Coppa is one of these kit-

tens. As his mother was an English tabby, and as the pedigree of the sire is so unmistakably pure, and of the spotted kind, it is not surprising that he was the model of a spotted tabby.

It will not be out of place here to give a brief description of the leopard-cat, as delineated in "Cassell's Natural History."

"This is another of the numerous Indian cats, and is a very beautiful species. Its hide is of a yellowish grey, or bright tawny hue, quite white below, and marked with longitudinal stripes on the head, shoulders, and back, and with large irregular spots on the sides, which become rounded towards the belly. The tail is a spotted colour, indistinctly ringed towards the tip. The body, from

the end of the snout to the tip of the tail, attains a length of from thirty-five to thirty-nine inches, eleven or twelve of which are made up by the tail.

“The leopard-cat is found throughout the hilly region of India, from the Himalayas to the extreme south, and Ceylon, and in richly wooded districts, at a low elevation occasionally, or when heavy jungle grass is abundant, mixed with forest and brushwood. It ascends the Himalayas to a considerable elevation, and is said by Hodgson even to occur in Tibet, and is found at the level of the sea in the Bengal Sunderbunds. It extends through Assam, Burmah, the Malayan peninsula to the islands of Java and Sumatra, at all events. It is as fierce as any of its savage kin.”

Mr. Scott sold his leopard-cat to the Zoological Society, and also presented with it the mother of Coppa and one kitten. But they unfortunately took a form of distemper, and all died, and other cats by the side of them. Coppa, Mr. Scott remarks, is probably the only one left.

Mr. Scott also remarks that he keeps Coppa confined, for fear of losing him. He was marked as dangerous at the show, on account of his pedigree, but is really. "perfectly tame and very fond." I judged so myself from his appearance and manner. He did, certainly, spit at a lady who blew in his face; but any good cat, with a spark of self-respect, would do so.

Black.—These fine cats are not so

commonly met with, of entire colour, as the brown tabbies, but are more plentiful than either the red or the blue. This colour is probably never met with in any of the wild cats, and would, I am inclined to think, be rare in the domestic races but for a prevailing superstitious notion, to be met with even in our enlightened age, that in some way good fortune or luck attends the homestead where a black cat dwells. And, moreover, that to destroy a black cat, or even a black kitten, from the purest motive, is an act likely to be followed by some misfortune. May I be allowed to endeavour to dispel this notion from the mind of any reader who may cherish a vestige of belief in the old charms of witchcraft, by boldly assert-

ing that the black cat is simply a tabby. In some black cats, and commonly in black kittens, the tabby character of the fur may be distinctly seen. Black leopards and jaguars are occasionally, but rarely, to be met with; and this natural melanism has been attributed to a larger proportion of iron in the blood. There is more iron in the blood of negroes, it is said, than in that of Europeans. Now, in these black leopards the distinctive pardine livery of the species is always present, and visible upon minute inspection. "Can the Ethiopian change his skin, or the leopard his spots?" (Jer. xiii. 23). Likewise, in our black cats, although not visible, the normal tendency of the species to maintain and reproduce its

characteristic livery is inherent in the blood.

The black cat, like the black leopard, if well bred and properly reared, is a most perfect specimen of its kind, having all the powers and instincts of his nature most strongly developed. When in good health and properly managed, and not shut out of doors at night, the black cat is generally a splendid creature, with a coat like satin for lustre.

White.—In bold contrast to the black cat is the white. Albinos, or abnormally colourless animals, are generally deficient in strength of constitution. It is owing to this fact that white cats are often more or less deaf. In selecting a kitten, I would never choose a

white one. There is something very charming about a snow-white kitten, but, when it becomes a cat, expect disappointment, more especially if in or near London, or some large town, where its purity is sure to be sullied by fog or smoke. It will, moreover, probably become dull and listless, and more liable to colds and other ailments than its more robust relatives.

Manx cats, as is well known, are remarkable for having no tail, or rather, only a very rudimentary tail. The breed is curious, and it is doubtless on that account alone that it is preserved. In other respects these cats are like the ordinary animals.

Siamese.—The handsome royal cat of Siam is at present but rare in this

country, and is worthy of careful preservation as a breed. It is a curious cat, of one colour, a clear tawny or buff, with the exception of the muzzle, face, ears, and feet, which are black; and the fur is short, but thick and sleek. It is a cat of average size, and of compact build. At first glance it almost suggests to the mind the figure of a pug dog.

Cats are occasionally met with, in the unusual variety class at shows, of very extraordinary colour, as slate colour, uniform grey, or mouse colour, brown, tawny, etc. Such as these may be regarded as simply unfinished tabby cats—if I may be allowed to use the convenient expression. And, occasionally, cats may be seen with six claws.



LONG HAIRIED CAT.

To face p. 77.

Long-haired cats, as Angola (or Angora) and Persian. — These cats, especially the Angola, are sometimes very fine animals. The hair is very long and silky, forming a thick mane upon the neck and upon the cheeks, and hangs from the sides in a manner which somewhat reminds one of the musk ox. The long tail is likewise pendant with long, silken hair, and when in good order looks very handsome. A good cat of the kind seems almost aware of its own beauty; and we know that puss has the universal reputation of being proud. But these cats require care and a good home. If neglected, exposed, or ill-treated, no animals sooner degenerate. They are, moreover, disposed to become lazy and listless, and, al-

though fashionable in a drawing-room, are not such pleasing companions, or of the same utility as mousers, as are the sleek, agile, graceful, and intelligent animals with which we are more familiar.

Gelded cats often grow very large, and, if properly kept, sometimes live to a great age. They make good, sociable pets, are not inclined to play truant, and they do not smell. The process is not a painful one if properly performed, and an animal thus treated will escape the temptation to stray or to combat with his fellows. At the age of six months, or even a little earlier, is the time at which a kitten should be sent to the veterinary surgeon. But on no account whatever must the operation be

attempted upon an animal of more advanced growth. As I have just intimated, one advantage gained is that it will not secrete and eject that characteristic fluid, the pungent odour of which is well known, and is, to some persons, very offensive.

CHAPTER VI.

ON THE DISEASES OF CATS.

I MUST now endeavour to describe a few of the ailments to which pussy is liable, and by pointing out the cause, when possible, may hope to assist the kind reader in avoiding the evil effect, bearing in mind the well-known proverb, Prevention is better than cure.

Considering the careless feeding to which the cat is often subjected, her digestive organs must be somewhat enduring; but, on this account, they must not be overtaxed or disregarded. There

is a very simple medicine to which puss will instinctively resort occasionally, which is grass. In an old translation of Pliny may be found the following quaint prescription for the cure of a sick lion:—

“The lion is never sicke but of the peevishness of his stomache, loathing all meat: and then the way to cure him is to ty unto him certaine shee apes, which, with their wanton mocking and making mowes at him, may move his patience, and drive him, from the very indignitie of their malapert saucynesse, into a fit of madnesse, and then, so soon as he hath tasted their bloud, he is perfectly wel againe: and this is the only help.”

Now, without the aid of a violent

remedy such as the above-prescribed, Miss Puss can stroll quietly out of doors and help herself to a small quantity of selected grass. This simply acts medicinally as either an emetic or as a purgative. It has been my practice, when keeping cats confined, to have some fresh, healthy grass in a large flower-pot in the most sunny spot, and sometimes put out in the open garden, so as to receive the benefit of all the light, air, and sunshine available.

Diarrhœa is a complaint to which the cat is sometimes subject in a mild form, and may attract but little notice; or it may be so severe or protracted as to cause great distress, and even prove fatal. As in ourselves, it may be brought on by violent changes of

temperature, together with unwholesome food or drink, irregular feeding, too much fat meat, putrid matter, too much liver, sour milk, etc. But in the cat the excrements may occasionally appear slightly loose without the animal seeming in the least unwell. This need cause little concern, although slight attention to the general diet and requirements of the animal will not be unwise. In this respect cats differ somewhat from dogs, which are constitutionally of rather constipated habit. When the cat is really ill, it will look so. Puss is a comfort-loving creature, and in nursing, comfort is to be the main consideration. Be careful to attend to the accommodation of clean habits, and allow a fresh supply of

earth or sand, as alluded to in Chapter IV.

There is a very simple remedy, and which I have proved to be a sufficient one, prescribed by the Honourable Lady Cust in her little book upon the cat, and I may here quote her own words:—

“In the commencement give new milk, with mutton-suet melted in it; the proportion of a piece of nice fresh suet, without skin, the size of a large walnut, to a teacupful of milk. Keep the cat warm and quiet in a comfortable nest, and if it be too ill to lap, give it, every two hours, a teaspoonful of the mixture, only just warm enough to melt the suet. Put it gently into the mouth with a small spoon. You need not swathe the cat, as after the first spoonful is swal-

lowed it will feel the benefit, and swallow another; but do not give much; it is better to give very little that will remain and do good, than a large quantity which will return. Treat the complaint in other ways as in the human subject. Observe if there be no bile; and if there is not, give to a full-grown cat a grain and a half of the grey powder (*Album. cum creta*) used in similar cases. As I before observed, you must watch the effect of your remedy, as the complaint may change at once; if it does not, and there is still no bile, give, in about two hours, another dose.

“If the diarrhœa continue, give a teaspoonful of chalk mixture, used for the same complaint in human beings, with seven or eight drops of tincture of rhu-

barb, and four or five of laudanum, every few hours, until it cures. Cats will continue as ill as possible for a few days, their eyes even fixed; but still, with watching and care, can be cured. A teaspoonful of pure meat gravy at a time should be given now and then (but not until near two hours after medicine), to keep up the strength until appetite returns; then be careful what food you give, and in small quantities at a time, as the digestion will be weak."

If, however, under fair treatment, the poor cat does not quickly recover, or if dysentery ensue, no hope can be entertained of its restoration; and the wisest and most merciful act will be to end quickly the life that must undoubtedly perish.

In administering medicine to a cat, be careful not to alarm or excite it by needless fuss and ado, nor try its patience by delay. Have what you require ready to hand, and the assistance of one person. Take a large, coarse cloth, such as a round kitchen towel or coarse apron, and seat yourself with your face or left side to the window. Then, with the cloth across your knees, take the cat from your assistant, and lightly gathering up the cloth, wrap it round the cat. The reason of this is twofold: to assist in gently holding the cat secure, and also to prevent its fur from getting soiled by any of the medicine that may drop, and, moreover, save your clothes also. With the cat facing towards your left hand, carefully open

the mouth. This must be done with the left hand. The mouth will be easily opened by finger and thumb, the palm of the hand being under the cat's throat. Gently feel with finger and thumb between the loose skin of the lips, and then, with very slight pressure just behind the molar teeth, the mouth will be opened wide, like magic. So long as you gently but steadily retain the hold, the mouth will remain open. But don't allow the cat time to become impatient, and mind your fingers. When the mouth is opened, your assistant must promptly and carefully administer the medicine. If it is a liquid, it must be poured in very little at a time from a small spoon. This must not touch the mouth, or the cat will instinctively bite

at it. The instant the medicine is given, remove your hold of the mouth and leave the head at liberty, in order that the cat may swallow at ease. A pill should be placed well back, so as to go the right way. A simple powder may be placed upon the tongue dry, mixed with butter, or, if not unpleasant, can be put in a little milk, to be drank as usual.

The Yellows.—The cat is liable to a form of distemper known as cat-sickness, or the yellows, which is analogous to jaundice in the human subject. It occurs more generally in large, high-conditioned animals, and I think it is more common in he-cats than in those of the other sex, and it more generally occurs in early life, but seldom before

the attainment of full growth. On the approach of the malady, the cat appears unusually dull and sleepy, and disinclined to touch any kind of food, but may attract little attention. Soon, however, the complaint will be self-evident by the vomiting of a peculiar yellow, frothy fluid. This sickness will recur at intervals, and the poor animal will loathe all food, and drink nothing but water. Sometimes the malady will run its course, and an unexpected recovery may follow; but in many cases the unfortunate cat becomes weaker and weaker, and ultimately dies.

Two or three months ago, from the time I am now writing, I nearly lost a splendid young cat named Colocolo; and I consider the unexpected recovery

due to the great strength of his constitution. He is totally black, and was, at the time of the attack, just over eight months of age. And as the circumstances connected with this individual case may perhaps be interesting to any who may have a cat similarly affected, it will not be out of place here to narrate the symptoms and the treatment, such as it was, from first to last.

Colocolo had been to the Crystal Palace Show, was highly commended, and the best behaved cat in his class, often ready for a little skittish sport with an attentive visitor. He had been home just a week when he was taken ill. Whether he had been made a little too much of after his return from the

Palace, I cannot say for certain; but I may here remark that I do not in the least think the show disagreed with him. He stood a four-day show at the Albert Palace well, was very highly commended there, and returned in high spirit. At these exhibitions the cats, many of them animals of considerable value, have the best and most careful attention on the part of the management. But they are sometimes pampered by their fond owners, and I may here suggest that after the confinement and restraint of even two nights and two days, it will be wise to be a little careful to avoid undue feeding for a day or two if the cat be in high condition, as show cats often are. [This mistake is equal to the folly, described with telling effect

by the late Albert Smith, of supplying blankets to a beloved son to keep him warm while ascending Mont Blanc!—ED.] *

But to return to the subject now under consideration. Colocolo was as bright as a lark, romping about, at times, with surprising vivacity and great bodily force. He was not less lively on the evening of Tuesday, October 27th, but the next day, however, he was observed to be listless, and disposed only to sleep. He declined to eat throughout the day, and about dusk his first sickness came on. For the next two days he continued to vomit occasionally, in less quantity, however,

* The above editorial note was added when the chapter appeared in *The Animal World*.

and the bowels were also disordered. He became weak to a degree most distressing to behold, and the whole skin was tinged with yellow. Nature was left to work her own cure. For five whole days and nights the poor creature ate absolutely nothing, but he frequently manifested a desire for water. A supply was kept constantly within his reach, and often completely renewed, for his mouth was very foul. On the forenoon of the Monday following, the weather being unusually mild, he crept into the garden and basked in the sunshine for some hours. It was sad to see a fine, noble, happy-spirited animal so altered. He was unable to move without staggering, and his hind limbs appeared as if paralyzed. He mounted a step with

difficulty, and in descending it he tottered and rolled, or rather sank upon his side. When he came indoors again, he returned to his bed, and fell into a most unusually heavy sleep—in fact, I never knew a cat to sleep so heavily. There was not a sign of life, and the eyes even appeared fixed. We thought he had at last slept the sleep of death, and felt a pang of regret, but not without a feeling of relief to think that the poor cat was thus released from its distress. But, strange to say, we shortly afterwards found that he had aroused and altered his position from on his left side, being coiled in a ball upon the right. After some time, he left his cushion and actually partook of a little milk, but only four or five

laps. Probably the strong air in the garden had overpowered his weak frame, and caused that extraordinary sleep, which was the turning-point, apparently, in his illness. But scarcely anything would he touch until Thursday (November 5th), when I offered him some fresh raw sheep's lights, full of blood. To my agreeable surprise, he ate what I gave, and looked for more. I allowed him a good sized piece, as much as I considered safe to give at first, taking into account his very weak state. On the strength of this he picked up as by magic, and forthwith began to recruit strength at a marvellous rate, and in a few days he became as well as ever. All his former energy had now returned; his coat, which had become dull, dirty,

dry, and staring, is now as soft, sleek, and pure as it ever was. Fortunately he appeared to suffer no acute pain during his illness, although he certainly was very miserable and dejected. But I have seen more distressing cases of this malady in cats, and it is often most humane to put the wretched animal out of its misery by a speedy destruction. Fortunately the yellows is an ailment that occurs but once.

It is, I consider, both unwise and cruel to tamper with strong drugs, and certainly it is mistaken kindness to force milk, or any other food, down the throat of a cat suffering from sickness. Let the poor animal be as quiet as possible, in a comfortable nest, but not so near a fire as to be hot. Sick animals

require air, but are very sensitive to cold or the slightest draught. As the cat is such a remarkably clean animal, it will, whether ill or well, often take a dislike to a favourite resting-place, if it become in the slightest degree foul or tainted.

At the very commencement of the sickness, however, an emetic may do good in clearing the stomach. But it should be administered at the beginning or not at all. I have tried it with good result, and have found simple salt and water most handy: it is harmless, at any rate. It may be mixed in the proportion of about one-fifth part of salt. Sulphate of soda (Glauber's salt) is sometimes preferred to salt. It must, however, be diluted in a much larger

proportion of water, and less than a teaspoonful of the mixture will be as much as should be given. To allay an undue continuance of sickness, arising from irritation, about half a teaspoonful of melted beef-marrow may be found to give relief.

Fits.—The cat is liable to fits of a distressing nature, and they occur in young animals—more generally about the time they attain their full growth—and are more common in male than in female cats. When seized with a delirious fit, the poor animal suddenly appears to go wild, dashes about in a frantic manner, with staring eyes, often darts through a window, open or shut, and then hides in some corner. The symptoms of a convulsive fit are some-

what different. In such a case it utters a cry, with staring eyes, and falls upon its side. The whole body appears stiffened, the limbs struggle convulsively, and the mouth foams. The cat is quite harmless, however, during the fit, and there need be no fear in handling it. But be gentle and quiet with the poor animal. The best way to give relief is to cut a very small slit in the thin part of the ear with a sharp pair of scissors, or to make slight incisions with a lancet; not enough to hurt or disfigure the ear, but just sufficient to draw a few drops of blood. It is well to encourage the bleeding by carefully fomenting the spot with warm water, but be very careful not to let any water enter the ear. If, however, the bleeding

is free, there will be no need for the warm-water applications. The loss of only a few drops of blood will afford relief. After the fit the cat will generally be timid and nervous, and should therefore be treated with consideration. Be careful to avoid overfeeding it; in fact, for a short time let its feeding be slightly lowered, if in high condition. The cat will quickly outgrow these fits. Many young toms have one attack, and a she-cat never has a fit after having once littered.

CHAPTER VII.

ON THE DISEASES OF CATS.

(Continued.)

PNEUMONIA, or *Inflammation of the Lungs*, is not an uncommon malady in the cat, and the tendency to pulmonary weakness appears to be transmitted from generation to generation, and is certainly more generally met with in cats of foreign origin, as Persian, etc., than in our own native kind. In fact, all the felines are evidently much more liable to lung disease than are the dogs. Nor are the larger forms exempt, for many a majestic lion, or a beautiful

leopard in our best-managed zoological collections, has succumbed to this fatal distemper. Exposure to cold and damp, poor feeding, etc., are generally the immediate causes of lung disease in the feline, as in the human subject. The symptoms in pneumonia are a dull, uneasy restlessness; the poor cat looks miserable, as doubtless it feels, and mopes about in a very dejected manner. It is less disposed to lie than it is to squat about. Pneumonia is usually accompanied by pleurisy, and if this complaint is as distressingly painful as I have experienced it to be, I am sure the cat must at times suffer the most acute pain. Inflammation of the lungs, although so generally fatal, may nevertheless be overcome by good nursing

under favourable circumstances. It occurs more generally in winter and spring—the most trying time, in our English climate, for both man and beast. Keep the cat indoors, and in a room of comfortable temperature, but not too warm, at, say, not much over 55° Fahr. A troublesome cough distresses the poor cat frequently, and the laborious breathing is manifest by the heaving of the flanks. In the treatment of the disease, apply, in the first instance, a stimulating liniment composed of equal parts of compound camphor liniment of the British Pharmacopœia and soap liniment. Rub it in upon the sides of the chest, and do not spread about more than is necessary, as cats are made miserable by the fur being soiled or tainted. The operation

may be repeated the next day if the liniment has not produced tenderness. Administer, internally, the following mixture every four hours, in a dose of ten drops:—Syrup of chloral, forty drops; syrup of squills, forty drops; ipecacuanha wine, ten drops.

As, probably, the cat will not eat, it will be well to keep up its strength by administering beef tea or good milk at intervals.

Bronchitis, or inflammation of the lining membrane of the bronchial tube, arises from much the same causes that produce inflammation of the lungs and pleura, and often accompanies these affections. Bronchitis may be readily distinguished by the peculiar wheezing and rattling sound which is made when

the poor cat is coughing. It may be treated the same as inflammation of the lungs, but the mixture to be given may contain twenty instead of ten drops of ipecacuanha wine, and also, in addition, ten drops of antimony wine; and fifteen drops may be given every four hours.

Mange is caused by a minute insect which burrows into the skin and there multiplies. The sarcoptic mange is the most common form that attacks the cat, and generally appears first upon the head and neck, and will, in time, if not destroyed, spread over other parts of the unfortunate animal. It is both humane and prudent, therefore, to check it at the outset. The disease is, moreover, contagious, and if a mangy cat is allowed to wander at large, it will com-

municate its trouble, to the ultimate distress of its fellows, and the annoyance of their owners. Sarcoptic mange may be at first detected by an irritating itching, but it soon breaks out into painful sores, which are aggravated by the repeated efforts of the poor cat to ease itself by rubbing and scratching. Fortunately, however, this disease is not difficult to cure in the cat, and with but little trouble. The principal agent employed, both externally and internally, should be sulphur. On no account use the strong dressings that are prepared for the skin diseases of animals of a different nature. An ointment composed of flowers of sulphur and fresh lard, rubbed upon the spot with the finger, is a very simple remedy, and I have proved

it to be a very effectual one. It is well, however, before applying this simple compound, to foment the spot with tepid water, and dry it with a soft, clean rag. Apply the flowers of sulphur and lard once or twice a day until it has taken effect. As it is not in the least unpleasant to the taste, the cat is sure to swallow more or less of it in dressing the fur, and more readily so if within direct reach of the tongue. The sulphur swallowed acts upon the system from within, most effectually poisoning the offending intruders in course of time. Mr. Harold Leeney, M.R.C.V.S., remarks that “a proof of this eccentric behaviour of sulphur may be found in the blackened watches and silver coins carried in the pockets of persons taking

the drug." In the *Animal World* for October, 1882, Mr. Leeney alludes to the application of sulphur as follows :—
"Sulphur in almost any form will destroy the parasites, but used as an ointment, much difficulty is experienced in washing it off again, and sulphur pure and simple being insoluble, and more active remedies dangerous, there is nothing better than a solution of sulphuretted potash, which should be applied warm, in the proportion of half an ounce dissolved in a quart of water. In using any skin dressing, whether for mange or fleas, or any other parasite, it is always advisable to begin at the head, as the opposite course leaves open a retreat to the ears and eyes, where the application is less likely to reach the

enemy. That fleas take refuge round the animal's ears when in the water was, no doubt, early observed, and gave rise to the story, current in sporting circles, that foxes rid themselves of fleas by swimming with a piece of wool in their mouths, to which the insects betake themselves for safety, and find out their mistake when it is too late.

“The sulphuretted potash lotion need only remain on the cat an hour or two, when it should be washed off with more tepid water, to which some glycerine has been added, to about the proportion of one ounce to each quart of water used. The animal should be carefully dried, giving special attention to the face and ears.”

Follicular Mange, so named from its

being caused by the presence of a parasite distinguished as *Demodex folliculorum*, is of a different nature to the sarcoptic mange, and is less readily expelled.

“ Unlike sarcoptic mange, which oftenest affects the hairless parts of the body, the follicular mange is found upon the back from the neck, down the course of the spine, to the tail. I think the reason of the selection on the part of the demodex is that the hair follicles, or little bags from which the hairs grow, and in which the parasite lives, are much larger, and afford better accommodation. The first symptom of anger in a dog or cat is usually the elevation of these hairs, showing them to be stronger, and consequently having

a larger base, than at other parts of the body.

“The unfortunate cat affected with this malady soon begins to arch her back and rub it against the staves of the chairs or the under part of a low couch or other convenient furniture; then the hairs are observed to be broken, and their condition attributed to this habit of rubbing, so that the real cause is often not suspected till great mischief is done and the parasites thoroughly established, the back becoming sore all the way down, and the animal rapidly losing condition.

“*Treatment.*—Since the cause is parasitic, destruction of the offenders is the object to be attained, and the best method is by laying bare their strong-

hold, by removing the scurf, etc., with soft soap, before applying any remedy. The reason for using soft soap is that the potash it contains causes the outer cuticle to swell up and become detached, and thereby permits the remedies to come in close contact with the insects, who are tenacious of life, like most low forms of animal life. Having thoroughly washed the sore skin, apply gently, but with a good deal of persistence, a lotion composed of one part of oil of tar to four parts of olive oil, taking care to cover the infected area, but not using any more than is necessary, as it is most easy to excite nausea in the cat, but not easy to allay it. This should be repeated alternate days, washing it off in the intervals with

plain curd soap, until the skin begins to look dry and scaly, and loses its redness. The administration of small doses of sulphur (milk of sulphur, two to three grains) daily will facilitate the cure, because it is found to make its way through the skin from within, rendering the cat a less desirable host."

Eczema (from the Greek, *ekzeo*, I boil out) is another form of skin disease to which the cat is sometimes subject, and is the effect of an unhealthy condition of the blood. Unlike mange, eczema is not caused by the intrusion of an insect parasite. The disease, being of quite a different nature, requires treatment of another character altogether. Again I use Mr. Leeney's words:—

"Those parts of the skin which

have upon them the least hair, as the belly and thighs, and under the elbows, are the most frequently attacked. It commences with a simple reddening of the skin, and a few days afterwards little watery bladders or vesicles are observed. These breaking, and their contents drying upon the skin, form an offensive, unctuous matter, which becomes mixed with dirt and the *débris* of broken hair, etc., and reacts upon the already inflamed skin. It is caused by an arid condition of the blood, or perhaps it would be more correct to say an insufficiently alkaline condition of it, since in health that fluid should have an alkaline reaction. Whatever doubt may be cast upon this theory as to the origin of the malady,

there is no doubt but that alkaline bicarbonates produce a speedy cure, and the recovery is much facilitated by soothing applications to the abraded parts.

“I would advise as a mixture, bicarbonate of potash, two grains; water, thirty drops; mix for one draught; to be taken twice a day. If the nurse cannot give the medicine as a fluid, the same quantity of potash may be mixed with a little butter or honey, and smeared upon the cat’s toes or shoulders, for she will soon lick it off there. Many cats will not detect it dissolved in a saucer of milk, as it has only the slightest saline taste. If neither of these methods is successful, two grains of exsiccated carbonate of soda may be

made into a tiny pill and given in a piece of fish.

“The skin should be well fomented with warm water and a sponge, with a little curd soap and glycerine added to the water. After carefully drying with a piece of lint or old, soft calico, an ointment of zinc (benzoated zinc ointment of the British Pharmacopœia) should be carefully applied for several minutes, careful manipulation being of more service than a large amount of ointment. We have spoken of the condition of the blood which gives rise to eczema, and of remedies likely to cure it; but prevention is, of course, better still.

“I have been able to trace the disease in some cats to access to a neighbouring

fishmonger's dust-hole, where offal has been thrown and allowed to decompose; in others it is traceable to milk. It is difficult enough to keep dogs from eating filth in the streets after refusing good food at home; but who shall restrain the cat? The removal of the offending material, rather than any additional restraint upon pussy, will be, if permissible, the best remedy.

“ I have known many cats quite cured without any other remedy than an abundant supply of horse-flesh, as retailed by the cats'-meat men.

“ While the subject of food is under consideration, I may mention that a very unfounded prejudice exists against horse-flesh; and while our French neighbours are making it an article of

human food, we retain our insular prejudices to such an extent that many people do not even like their dogs and cats to eat it. As a general rule, horses are slaughtered because lame or incapable, and their flesh is in a healthy state, and affords good, sound muscular fibre, while those who die generally do so from acute diseases, as colic, inflammation of the lungs, hernia, etc., etc., the flesh or muscular parts being in no way injured or rendered deleterious. A noticeable example of flesh-fed cats is to be seen in the many large and handsome cats at the Royal Veterinary College, who feed themselves on the donkeys and horses in the dissecting-room."

Before concluding this chapter I may

suggest that, with fair attention, a good cat may be expected to live out a fair term of years, and perhaps without any special ailment. Certainly the causes of disease and death are not a few, sometimes obscure, or of a complicated character; yet the cat is not singular in its liability to pain and death, for such is the portion which falls to all creatures, man not excepted. But when we consider that the cat is a rather fast-breeding animal, and has fewer natural enemies than many other creatures—the rodents, for example—it is evident that the feline race, both in its wild and domesticated state, must be subject to such a constant check upon its undue increase as is justly required to maintain the right balance in creation.

Few cats live to old age, which may be estimated at fourteen years. I have heard, however, of two cases at least in which the extraordinary age of twenty-two years has been attained. But what a vast proportion are not permitted to survive as many hours! The irrefutable assertion in the Book of Ecclesiastes, that there is "a time to be born, and a time to die," having reference to the limited duration of human life, may with equal truth and propriety be considered respecting the whole animal creation. Death is one of the essential laws in nature. Disease and violence may be regarded as but instruments of destruction in the hand of the Almighty. No thoughtful student of nature can fail, however, to be deeply

impressed by the evidence that the great God that made all things is not only infinite in power and wisdom, but a God of love. To use the words of Isaac Walton: "The study of the works of nature is the most effectual way to open and excite in us the affections of reverence and gratitude towards that Being whose wisdom and goodness are discernible in the structure of the meanest reptile."

Worms.—It may be difficult, however, to comprehend, or to regard without disgust, such loathsome forms of life as are the different worms, in some form peculiar to, perhaps, every species of mammal, bird, or fish.

As Mr. Leeney observes:—"Cats are subject to wandering parasites, which

pierce the tissues and cause much pain and illness in seeking ‘fresh fields and pastures new.’ Pussy is not exempt from the *Trichina spiralis*, which, as my readers are probably aware, is the cause in man, in swine, and other animals, of the dreadful malady known as trichinosis.

“It is during the wandering of these minute worms that the fever and pain is produced in the subject, be he human or any other animal.

“That cats should be more liable to this parasite than man is readily understood when we take into account the liking they have for raw meat, while cooking generally obviates the danger from man. The prevalence of trichina, and the disease produced by it, in

Germany, is to be accounted for by the custom of eating uncooked ham and other things. I have myself eaten this 'schinken' in Germany. I am afraid if trichinosis could be detected in a cat no remedy could be suggested; but in speaking of worms, it ought to be taken into consideration, and may, perhaps, account for some of the obscure causes of death in our domestic pet.

“ There are, again, worms whose habitat is the blood-vessels, and whose choice for a nest is the junction or branch of some artery—a favourite one being that vessel which is given off from the great trunk (*posterior aorta*) to the liver (*hepatic*). The presence of such a nest occludes the vessel, and produces changes in the structure of its coat,

which, together with the diminished calibre of the vessel, seriously affects the liver, by depriving it in a great measure of its nourishment, its substance, like all other parts of the body, depending for its maintenance and repair on the constant circulation of fresh blood, charged with material for supplying the daily waste.

“The ducts or passages from the liver through which the bile should pass are the favourite haunt of another kind of parasite—the fluke; here ‘they do most breed and haunt,’ producing dropsy, a condition well known in sheep, and called the ‘rot.’

“These, like the strongylus occasionally found in the kidneys, are most fatal to their bearers, and unfortunately beyond the reach of remedies.

“A great many remedies have been suggested for sheep suffering from their presence, but the chief difficulty consists in the fact that any remedy, in order to affect the parasite, must enter first into the circulation of the bearer, and the turpentine which would kill the fluke would first kill the cat; and again, the salt, which ruminants enjoy, could not be given to the cat, because vomiting is so easily excited, and so much would be required.

“Fortunately for cats and dogs, the kind of worms to which they are most subject are generally situated in the stomach and bowels, and are to be dislodged without much difficulty. It may be taken as a general rule that round worms can be expelled by santonin, and

flat worms by areca-nut ; but some care should be exercised in the administration of these drugs.

“ If a cat is found to be very thin, and her coat is stiff and harsh, accompanied with vomiting of round worms, or they are observed in the excrement, a pill should be made of half a grain of santonin, and ten grains of extract of gentian, and two or three grains of saccharated carbonate of iron, and given fasting, at intervals of two or three days. The best way of giving a pill to a cat is to stick it on the end of a penholder, and, having opened her mouth, push it back on the tongue without any fear of its going the wrong way, and withdraw the penholder suddenly. The pill will almost certainly be swallowed,

as the rough papillæ on the cat's tongue will have prevented the pill being withdrawn with the holder, and it should have been placed too far back for the patient to do anything with it but swallow it.

“If tape-worm has been observed, from one to three grains of areca-nut (freshly grated) should be given in the form of a pill, mixed with five grains of extract of gentian, and two grains of extract of hyoscyamus. Areca-nut will probably produce the desired effect given alone, but it too often produces acute colic, and even fits, if not mixed with some sedative.”

There is a worm peculiar to the feline race only, and known as *Ascaris mystax*, or the moustached worm, so called from

the four projections at the head. This worm more generally infests the intestines, but often lodges in the stomach, and grows to a considerable length, and is then usually vomited up, to the relief of the poor cat.

“ The presence of this or other guests within the stomach is often a cause of gastric derangement, and the cat will be at times voracious, and at others ‘very dainty,’ no doubt feeling faint and nauseated by the irritating presence of the worms, and desperately hungry sometimes from being robbed of its nourishment; for it must be remembered that worms do not simply eat the food as it reaches the stomach from time to time, but they live on the all but completely digested food, or chyle, which is just

ready to enter the circulation, and contains all the most nutritive part of the food in a condition fit for building up the animal structures, and replacing the waste which is always taking place. It is only by the consideration of this fact that we can understand how a few small worms can so rapidly cause the bearer to waste away."

And now, in concluding, may I suggest that there is "a time to kill, and a time to heal," and that when a favourite cat is really ill, in pain, or has met with a serious accident, it is often both wise and merciful to drown or shoot the poor animal effectually, and without delay. Drowning, as I have before observed, is, perhaps, the simplest and the least painful of the ordinary methods of destruc-

tion. Shooting must be resorted to with care and forethought, and no possibility allowed of the cat escaping but only wounded. Poison is at all times to be avoided.

FELINE INSTINCT.

I.

MITIS and Riquet are two tom-cats saved from a litter of five ; their mother is an Angora, slate-coloured, with the neck, breast, and tips of the paws white. Mitis has a large head and limbs, and a coat which promises to be Angora and the same colour as his mother's, a white muzzle, and white underneath his eyes, while his lips and the tip of his nose are bright pink. Riquet's body and tail are black, with grey marks ; his head, which is smaller than his brother's, is grey, with zebra-like bands of black crossing longitudinally and laterally ; two white streaks branch out from the upper end of the nose, and on the forehead two curved lines, starting from the corners of his eyes, surround a disc of black and grey.

No sooner has their mother licked them over than they set off whining and seeking for her teats. I made some observations of their movements on the first and second days ; but as I am afraid of not recording them with sufficient accuracy from memory, I will begin

with the third day, when I took to writing down my observations.

12th May.—They are perpetually moving about, even when sucking and sleeping. Sleep overtakes them in the act of sucking, and then, according to what position they were in at the moment, they either remain ensconced in their mother's silky breast, or fall over with open mouths into some graceful attitude. The little gluttons, Riquet especially, who seems to be delicately organised, are often troubled with hiccoughs, reminding one of young children who have sucked too copiously. It is curious to watch them when searching for a teat, turning their heads abruptly from right to left, and left to right, pushing now with their foreheads, now with their muzzles; tumbling and jumping one over the other, sliding between their mother's legs, trying to suck no matter what part of her body; and finally, when they have settled down to their meal, resembling leeches, whose whole activity is concentrated on the work of suction, and who, as soon as they have thoroughly gorged themselves, let go their hold and fall back into *inertia*.

Whenever their sensibility is unpleasantly excited, as, for instance, if their mother leans on them too heavily, or leaves them alone, or performs their toilet too roughly, they give

vent to monotonous—I had almost said monosyllabic—plaints; sounds which can scarcely be called *mias*, still less *miaows*; they are best described as trembling *mi-i-is*. They also emit these plaintive sounds when they have been searching long for a teat without finding one, or if they annoy each other during the laborious search; or if I take them up too quickly, or turn them over in the palm of my hand to examine them. If I set them up in my hand in a standing position, they will remain motionless for a few seconds, as if enjoying the warmth of my hand; but very soon again they begin clamouring with loud whines for their home in the mother's warm, soft stomach, which is at once their shelter and their dining-room, the familiar, and perhaps the loved, theatre of their nascent activity.

13th May.—This morning Mitis appeared to be ill. He was languid, did not whine when I took him up, and made no attempt at sucking; he had an attack of hiccoughs, accompanied by shiverings all over his body, which made me anxious. It only lasted an hour, however: there may have been some temporary cause of indisposition; or perhaps excessive sucking, or a very great need of sleep, had reduced him to a semi-inert mass.

Riquet's head is prettier than it was yesterday; the white spot has increased in size, the

grey marks have spread and grown lighter, and the head and neck are rather larger; but *Mitis* has still by far the finest carriage.

Twelve o'clock.—The two leeches have been operating for twenty minutes without desisting. They are now brimful of milk, and settling themselves down, no matter where—one on the mother's stomach, the other on her paws; no sooner have they placed themselves than they fall asleep.

Two o'clock.—They have no fixed position for sucking; any does that comes first.

When the mother leaves them alone for a moment they turn in rapid gyrations round and round, over and under each other, delighting in the mutual contact of their bodies and the warmth which it engenders. If the mother remains absent for some minutes, they end by falling asleep one over the other in the shape of a cross. If I lift up the top one, the other soon begins to whine: they are not accustomed to solitude, and it produces a painful impression of cold. Very young animals are easily chilled, and sometimes die of cold in a temperature which is not very low. This is owing to the smallness of their bodies and the feebleness of their respiratory organs.

Between four and five o'clock *Riquet* seemed to me very lively. He was searching for a teat which he could not find, and for ten

minutes he crossed backwards and forwards over his brother's body, giving him frequent slaps with his paws.

Riquet's nose is a pink-brown, but tending to red-brown.

This evening (ten o'clock) I showed the mother a saucer full of milk; she left her kittens to go and drink it, and afterwards she took a turn at a plate of porridge; her absence lasted barely five minutes. The kittens, during this time, went through their usual manœuvres: Riquet turned three times running round his brother; the latter, who is more indolent, or perhaps has more need of sleep, stretched himself out full length on his side. Riquet, however, cannot rest till he has found what he is searching for—viz., the body of his mother. He is still in a state of agitation when the cat comes back, raises herself with her front-paws on the edge of the box, and drops quietly down by the side of her little ones without touching them. Instantly they start up, raising their little waggling heads; they know that their mother is there—the slight noise she made in getting into the box, and the movement she imparted to it, are associated in their memory with the idea of her presence.

The mother's first care is to see to their toilet, and she proceeds to turn them over with two

or three strokes of her tongue, and then operates on them with the same natural instrument. Both have their turn; and at the end of the operation, which seems to worry them, they whine considerably, though not at all loud. A few minutes after, the melodious snoring of the mother informs me that the whole family is at rest. I take a peep at them: the mother is laid on her left side, describing a large and elegant curve; Mitis, half on his hind-paws, half on his stomach, is stretched across Riquet, and both are sleeping, or sucking—perhaps doing both at the same time.

14th May.—My kittens seem to grow as I watch them, especially Mitis' head, neck, and back; he is a massive heavy kitten, but his forehead is broad and high: he will probably be an intelligent cat; his leonine chin, large and well developed, indicates energy and goodness. He begins to show more vivacity than during the earlier days; when he encounters his brother in searching for a teat, or if the latter disputes with him the one he has got hold of, he deals out at him rapid strokes with his paw, which remind one of a dog swimming. His mother has just been performing his toilet in the manner aforesaid, and has no doubt kept him longer at it than he liked; he shows his displeasure by striking

out his hind paws, one of which knocks against his ear, and uttering two or three impatient *mis*.

These very occasional and but slightly emphasised cries are the only ones which Riquet—even the brisk and lively Riquet—gives out, even when I take him in my hand. I have seen other cats that were more unhappy complain more: one, for instance, which was the only one I had kept out of a litter, and which died at ten days old, just as it was beginning to open its eyes; in her grief at having lost all her other kittens, the mother used to carry this one about from place to place, and even leave it alone for hours at a time; I believe it died from bad treatment and insufficient feeding; the poor little thing frequently uttered loud moanings. I cannot feel the slightest doubt as to the causes of its death when I see the mother so happy with the two that I have left her this time; she has not once called or searched for the other three which I drowned. Does this proceed from a want of arithmetical aptitude? *Two*, for her, are *many* as well as *five*. However this may be, she is very happy, very *repue*, very attentive, and her little ones are habituated to comfort, ease, satisfied desires, and tranquil sleep and digestion. If they do not know how to complain I think it is because they have had no reason to learn to do so.

The colour of Riquet's hair is changing sensibly: the grey-white now preponderates on his face. The velvety black of his neck, back, and sides is silvered with whitish tints, which have spread since the morning.

Often when they are alone, or even if their mother is with them, they will mistake no matter what part of their bodies for teats and begin to suck it, as a child of six months will suck its finger or even the tip of its foot.

15th May.—To-day I held Riquet on my hand for three minutes. I was smoking a cigar; the little creature stretched out its neck, poked its nose up in the air, and sniffed with a persistent little noise. A sparrow, whose cage was hung up over us, frightened at my smoking-cap, began to fly round the cage and beat at it with its wings. At the sound of this noise Riquet was seized with a sudden fit of trembling, which made him squat down precipitately in my hand. Movements of this kind are reflex ones, the production of which is associated in the organism with certain auditory impressions; but the animal is necessarily more or less conscious of them, or will soon be so. From five minutes' observation I have thus learnt that Riquet is sensible to strong smells, and that he already goes through the consecutive movements of sentiment and fear.

Riquet's head is visibly changing to silver-grey; the marks on his back are also assuming this shade.

I took Mitis in my hands, stretched them out and drew them up again. He does not seem to know quite what to make of it; he attempts a few steps, feels about uncertainly with his head, and comes in contact with my coat smelling of the cigar; he appears to be scenting my coat, but not with so much noise and vivacity as Riquet does. He waggles his head about, feels about with his paws, and tries to suck my coat and my hands; he is evidently out of his element and unhappy. The mother calls to him from the bottom of the box; this causes him to turn his head quickly in the direction from which the sound comes (what a number of movements or ideas associated in the intelligence and organism of a little animal four days old!); he starts off again, making a step forward, then drawing back, turning to the right and to the left, with a waddling movement. I give him back to his mother.

I thought I noticed once again this evening that the light of my lamp, when held near the kittens' box, caused rather lively excitation of their eyelids, although these were closed. The light must pass through these thin coverings and startle the retinas. The kittens were

agitated during a few seconds; they raised and shook their heads, then lowered them and hid them in the maternal bosom.

The noise of carriages, the sound of my voice, the twittering of the sparrow, the movements imparted to the box by my hand—all throw them into the same kind of agitation. These movements may be coupled with the movements, unconscious no doubt, but determined by external causes, which are observed in the young.

16th May. —Mitis' tail is thickening at the root; the hair of its head and neck is close and silky; he will no doubt turn out a considerable fraction of an Angora.

When I place the kittens on the palm of my hand they inhale strongly and with a certain amount of persistence; this is because their sense of smell operates no doubt with tolerable completeness, in view of the species, and in the absence of visual perception, and by reason of the imperfect operation of their touch.

This evening Mitis, having escaped from the constraint in which his mother holds him to perform his toilet, half *plantigrade* half *gastéropode*, dragged himself slowly, though as fast as he was able, along his mother's paws, and at last nestled down in the soft fur of her stomach. While in this position his head,

rolling like that of a drunken man, knocked against the head of Riquet, who was in the act of sucking. Instantly Mitis lifts a paw and brings it down on his brother's head. The latter holds on, as he is very comfortably spread out on the bottom of the box, and is sucking a teat placed low down. A second attempt of Mitis' fails equally. He then performs rapid movements with his head, searching vigorously for his cup, but not finding it. The mother then places a paw on his back, and his centre of gravity being thus better established, he at last accomplishes his object. Here we have several actions which are no doubt in some degree conscious, but which come chiefly under the head of automatism: the scent which helps in the search for the teat, the instinct to dispute the ground with another who is discovered to be sucking, the movements of intentional repulsion, of struggle, of combativeness. What an admirable machine for sensation, sentiment, volition, activity, and consciousness, is a young animal only just born!

17th May.—I have observed—or think I have observed—in Mitis, the more indolent of the two brothers, the first symptoms of playfulness: lying on his back with his mouth half open, he twiddles his four paws with an air of satisfaction, and as if seeking to touch some one or something. It is eight o'clock in

the evening, the window is open, the sparrow is singing with all its might in its cage, we are talking and laughing close to the cat's box. Do all these noises in some way excite the sensoriums of the two *repus* kittens? The fact is, that they have been in a state of agitation for more than a quarter of an hour, travelling one over the other and walking over their mother's stomach, paws, and head. Mitis, the heavier of the two and soonest tired out, was the first to return to the teat. Riquet's return to the maternal breast has been a long and roundabout journey from one corner of the box to the other, and round and round his mother.

At nine o'clock I went to look at them with the light. This threw them into dreadful consternation. I observe in them both something like intentions to bite, while rolling each other over, they keep their mouths open, and snap instead of sucking when they come in contact with any part of each other's bodies; but it is all mechanical. Here we have an increase of activity produced by an accession of powers and temporary over-excitement.

18th May.—They are lying asleep on their sides, facing each other, with their fore-paws half stretched out against the hind ones. Riquet's sleep is much disturbed; his mouth touches one of his brother's paws, which he

instantly begins to suck. Is this a mechanical or unconscious action? Is he not possibly dreaming? After four or five attempts at sucking he lets go the paw, and sleeps on tranquilly for four minutes; but the noise of a carriage passing in the street, and perhaps the consequent vibration of the floor and the bottom of the box, cause violent trembling in his lips, paws, and tail.

The mother gets back in the box; and the kittens, instantly awake and erect, utter three or four *mis* to welcome the joyful return.

In settling herself down the mother leans rather heavily on Riquet; the latter, who used formerly to extricate himself mechanically, and who already knows from experience the inconvenience of such a position, moves off brusquely, goes further away than he would have done formerly, and Mitis, on the look-out for a teat, hears close to him the noise of his brother's sucking. He pommels his head with his hind-paws, rolls up against him, striking out with his fore-paws, and knocks him over with the weight of his body; he is now in possession of the teat which his brother had first tried, and, finding it as good as the one he was sucking before, he sticks to it.

18th May.—Mitis was trying to worry Riquet who was busy sucking. I hold out my hand

to make a barrier between the two; Mitis pushes it back with his paw, but soon perceives the difference between the two bodies which he is pushing against, gives over his excitement, and looks out for another teat. No doubt in this case there was no comparative perception of difference, but different sensations producing different muscular actions; that is all, I imagine, but this is nevertheless the germ of veritable comparison.

19th May.—Both the eyes of both kittens are about to open; the eyelids seem slightly slit, and are covered with an oozy film. At the external corner of Mitis' right eye there is a little round opening disclosing a pale blue speck of eyeball, the size of a pin's head. At the internal commissure of the left eye there is also a round opening, but much smaller, and showing no eye-ball through it. Riquet's right eye is also opening slightly; the edges of the left eyelids are stopped up by a yellowish discharge.

I fancied that Mitis was playing in the box; I tumbled him over on his back, tickled his stomach, and stroked his head; he struck out his paws without attempting to pick himself up; this was evidently a more or less conscious attempt at play. His mother came to lick him in this attitude, and he performed with his fore-paws as previously. Riquet, too,

shows a tendency to play, but not of such a pronounced nature.

21st May.—Riquet's left eye is beginning to open at the inside corner.

I took them both up on my hand, and waved my fingers in front of their partially opened eyes; but I did not observe any movement from which I could infer the power of distinguishing objects.

Mitis, placed close to his mother's head, nibbles at it and plays with his paws on her nose; the mother does not approve of this amusement; she lays a paw on her son's neck and teaches him respect; soon he escapes from her grasp, and begins searching for a teat.

Some streaks of fawn-colour have mixed with the zebra-like black and grey on Riquet's neck: he is now quadri-coloured.

Mitis is seated on my hand. I kiss him on the head, three times running, making a slight noise with my lips; he shakes his head twice. This is an habitual movement of the mother cat when one kisses her or strokes her head and it displeases, or if she is occupied with something else.

When I pass my hand in front of their heads, at about four *centimètres*' distance, they make a movement with the head and wink their eyes; I am not sure whether this means

that they see, though their eyes have been more or less open since yesterday evening.

They have not yet begun to purr.

22nd May.—I went up to the box towards twelve o'clock. Riquet's left eye, the light blue colour of which I can see, seems to perceive me, but it must be very indistinctly. I wave my hand at ten *centimètres* from his eyes, and it is only the noise I make and the disturbance of the air that cause him to make any movement.

Both Mitis' eyes are almost entirely open; I hold my finger near his nose without touching it, I wave it from right to left and left to right, and I fancy I perceive in the eyes—in the eyes more than in the head—a slight tendency to move in the direction of my movements.

23rd May, 7 P.M.—Their movements are less trembling, quicker, and fiercer not only because of increased strength and exercise, but because intention, directed by eyesight, is beginning to operate.

The more I observe young animals, the more it seems to me that the external circumstances of their development—alimentation, exercise (more or less stimulated and controlled), ventilation, light, attention to their health and their *affective* sensibilities, care in breeding and training,—are perhaps only

secondary factors in their development. Actual sensations, it seems to me, serve only to bring to the service one set of virtualities rather than another; a sentient, intelligent, active being is a tangled skein of innumerable threads, some of which, and not others, will be drawn out by the events of life. This it is that marks out the precise work, limits the power, but at the same time encourages all the pretensions of educators. If all is not present in all, as Jacolot asserted, who can say what is and what is not present in a young animal or a young child?

I placed Mitis on a foot-warmer, the contact with which produced two or three nervous tremblings, somewhat similar to slight shiverings; he seemed pleased, however, and stretched himself out on the warm surface, with his eyes half-closed, as if going to sleep. Afterwards I placed Riquet there; he went through the same trembling movements, but then proceeded with an inspection with his muzzle—scenting or feeling, I do not know which, the article on which he had been deposited. He then gently stretched out a paw and laid himself down flat, the contact with the warm surface inducing sleep, by reason of the familiar associations between the like sensation of warmth experienced on his mother's breast and the instinctive need of sleep.

When they trot about in their box, some of their movements appear to be directed by sight.

Their ears have lengthened perceptibly during the last two days, and so have their tails.

When any one walks about the room, if they are not asleep or sucking, they begin frisking about immediately.

The mother, whom I sent to take a little exercise in the courtyard, has been absent for half an hour. Mitis is asleep; Riquet, lying with his head on his brother's neck, was awakened by the sound of my footsteps, all the more easily roused no doubt because he was hungry, and because his mother had been absent so long. I stroke his head with my finger, and he puts on a smiling look. I make a little noise with my lips to rouse the sparrow, and this noise pleases Riquet, who listens with the same smiling countenance.

They now attempt to climb higher; they do not knock their noses so frequently against the partitions of the box, they certainly direct their paws at certain points determined by their vision; eyes, noses, and paws now operate in concert on the teats or any other objects that come across their way; for they do not go much in search of objects as yet. Their field of vision does not stretch very far; what they see is matter of chance and accident.

rather than of real intention. If I wish to attract their attention by waving my hand, I must not hold it further than fifteen *centimètres* from their eyes. I must go very close to them before they appear to distinguish my person. I am not sure that they see the whole of it; I rather think that only certain portions are visible to them,—amongst others my nose, because it stands out in relief, and my eyes, because they reflect the light vividly.

24th May, 9 P.M.—The orbits of their eyes seem to me rather more expanded than this morning, possibly because the light makes their pupils contract. I placed a candle on a chair by the side of their box; the light evidently annoyed them, but it stimulated them to exercisè their limbs. Mitis, after having promenaded and struggled about in a corner of the box, and grown accustomed to the lively sensations on his retina, directs his steps towards the most brightly-lighted point of the box. A band of light falls full on the upper part of the partition on the side facing me. Mitis, and Riquet after him,—more from imitation than personal excitement,—tries to climb up this luminous board; he does not succeed, but the attraction continues undiminished. I thought involuntarily of the plants which struggle up walls to reach the light.

Mitis, still somewhat disconcerted—though much less so than at first—when he looks directly at light, retires into a corner, and tired, no doubt, with the exercise he has just been taking, places himself, or rather falls back, on his mother's tail. I take him up gently, and set him in front of his mother's stomach, and by the side of Riquet, who had just finished his gambols also, and was sucking. Then began a scuffle, the front paws working away perceptibly like the *battoirs* of a washerwoman. I come to the rescue, placing my hand between them, and this calms them down; they favour me, however, with a few ridiculous little taps. Mitis, meanwhile, has taken possession of the contested teat, and celebrates his victory by the first *purr* that to my knowledge he has produced.

Riquet is now in a great state of agitation; he is lying in the dark, behind his mother's back, and close to the side of the box facing me. I hold my finger to him; he lifts himself up and leans his head slowly forward to touch or scent my finger. He can now distinguish people, but more by touch, scent, or hearing than by sight, the latter sense being very imperfectly developed and little exercised. When I make a slight noise with my lips the little creature starts and jumps about, but does not lift up his eyes to my face, which

he has seen close to him, has looked at with attention, but which he is very imperfectly acquainted with, and does not accurately localise with respect to my hand and my body.

Riquet is close to his mother's head. He has stretched a paw over her neck, and is looking at some part or other of her head, I don't know which, while playing gently with his little paw. Here we see an intelligent development of affection; he now loves his mother in a more conscious way; his visual and tactile perceptions are becoming co-ordinated, are amplifying his knowledge, and giving strength and precision to his sentiments.

I stretch out my finger to Mitis, who is still lying on the spot where I found him at first. In return, either from curiosity, or from instinctive impulse and movement, he holds out his little paw, which seems to enjoy the grasp of my finger, and sticks to it.

25th May.—I place my kittens, one after the other, in the hollow of my hand. Mitis squealed when I lifted him out of the box, and during the three minutes that I kept them in my hand they both seemed almost indifferent. The instant, however, that I put them back in the box they seemed quite delighted to get back again, or else they were stimulated to play by the various sensations

—muscular, visual, tactile, and thermal—which I had occasioned them. Standing and walking about on my hand had stimulated Mitis to an extraordinary display of strength. In his desire for prolonged exercise, and no doubt also wishing to renew the vivid sensations of light he had just experienced, he set to work to climb up the perpendicular wall of his dwelling, making all the time a great noise of scratching. All movement produces sensations; and all sensations produce movements.

26th May.—They both play with their paws and their muzzles, but frequently, as if by chance, only without very marked intention, and with very uncertain movements.

I seem already to distinguish in them two different characters. If one can go by appearances, Mitis will be gentle, patient, rather indolent and lazy, prudent and good-natured; Riquet, on the contrary, lively, petulant, irritable, playful, and audacious. Noise and contact seem to excite him more than his brother. But both of them are very affectionate towards their mother, or perhaps I should say very appreciative of the pleasure of being with her, of seeing, hearing, and touching her, and not only of sucking from her.

I hold Mitis up to the edge of the box; he evinces a desire to get back to his mother, but does not know how to manage it. His muscles

have not yet acquired the habit of responding to this particular psycho-motive stimulus; he crawls up to where my hand ends, advances first one paw, then another, and finds only empty space; he then stretches out his neck, and two or three times running makes an attempt with his paws at the movements which are the precursors of the act of jumping. He would like to jump down, but cannot do so; instinctive intention is here in advance of the adaptiveness or the strength of the muscular apparatus fitted to execute it. He retreats frightened and discouraged, and whines for help.

Riquet placed in the same position, goes through almost the same movements, but he is able to do more; he has managed to seize hold (chance perhaps assisting him) of the edge of the box, he sticks to it, leans over without letting go, and would have got down, or rather tumbled down, into the box, if I had let him.

27th May. Every day they get to know me better. Now, after I have taken them in my hands, or stroked their head, neck, or lips, they go back to their box quite excited; they walk about in it faster than before, snap at each other and strike out their paws with much more spirit. Play has now become a matter of experience with them, and grows

day by day a little more complicated; they seem to be aware of their growth in strength and skill, and to derive pleasure from it. To-day, for the first time, Riquet scratched the piece of stuff on the bottom of the box, and he did it with playful gestures and an expression of delight; first he stretched out one paw, then the other, with his claws turned out, and, being pleased with the noise produced by drawing back his claws, he renewed the operation twice, but no more. It will be necessary to go through the same experience two or three times more, in order to fix the idea of this game in his little head.

They have already tried several times running (either by accident or with a vague idea of ascending) to hold on to, or climb up, the sides of the box; if they were not slippery, or were covered with a cloth, I think they would have strength enough to lift themselves up to the edge.

They lift their head and paws as high as they can, in order to see better. All the inside of the box seems to be sufficiently well known to them, but all the same they are constantly making experiments in it, either by touch, sight, hearing, scent, and even taste; for they frequently lick the board, and try to suck the cloth at the bottom. They would no doubt gladly extend the area of their

experiences, but I shall leave them habitually in the box until they are able to get out of it by themselves; they can get quite enough exercise in it, and they have enough air and light, and I think the prolongation of this calm, happy, retired existence makes them more gentle. The mother prefers their being in the box, and I am of the same opinion, though not perhaps for the same reasons. They would become too independent if allowed to follow their caprices, and exposed to the dangers of adventure, instead of being accustomed to the restraint of the hand which they love and which *humanises* * them. I want them to become so thoroughly accustomed to my hand, that, when they receive their freedom, they will still recognise it from a distance, and come to it at my will. My hand is a very precious instrument of preservation and education for them.

28th May. When, standing close to the box, I take Mitis in my hands, he looks at the box, bends his head, stretches out his paws, and shows a considerable desire to get down, but without making any effort towards this end. I hold him a little lower down, at a few *centimètres* from his mother, and he no longer hesitates but lets himself glide down

* The Latins had the happy expression *mansuctus* to express this idea.

to her, his movements, however, only turning out a success thanks to my assistance. Can it be that he had (what Tiedemann does not even allow his fourteen-months-old child to have possessed) a vague perception of distance, of empty and inhabited space, anterior to personal experience? "He had not yet any idea of the falling of bodies from a height, or of the difference between empty and inhabited space. On the 14th October he still wanted to precipitate himself from heights, and several times he let his biscuit fall to the ground when intending to dip it in his cup."

The kittens endeavour to climb along the sides of the box, but their idea of height (perhaps an instinctive idea) is not sufficiently determined; they seem quite astounded at not reaching the goal with the first stroke. At the same time I may be mistaken in my observations; perhaps they went up these four or five *centimètres* mechanically, because in walking along horizontally they found under their paws the surface of the partition which may have seemed a natural continuation of their road. Perhaps they have no wish to get up to the edge of the box.

28th May.—The grey spots on Riquet's back are now almost as large as the black ones.

The eyes of both kittens are getting less and less blue; they are assuming an indistinct

colour, between dirty grey and light brown. Their expression is frank and sympathetic; they seem to direct their looks consciously and voluntarily.

Riquet is looking at me with an expression of pleasure, seated upright, with his paws lifted languidly. I hold my finger near him, and he extends his left paw. I stroke the left side of his head, and he leans the part which I caress on my finger, as a full-grown cat would do, and rubs himself two or three times running against my finger. These are *invented* movements—I mean movements furnished all of a sudden by the stimulus of hereditary virtualities, and which seem to astonish the young animal as well as to please him; it is thus that we see automatic movements at one moment coming under the control of consciousness, and the next escaping from it, refined, simplified, adapted, and perfected. Life invents but few new movements; but there are many, no doubt, ready to appear if the influences of surroundings permitted it.

29th May.—They are learning more and more to exercise their muscles and perfect their movements; they are daily acquiring fresh powers and *adaptations*, and in their games with each other and their mother they show intention and pleasure; they are learning more and more to distinguish people; if any

one presents a finger to them, they always hold out their nose, or else a paw; this seems to have become a reflex action with them. They also appear to localise certain sensations which are in some sort artificial. I touch the tip of Mitis' left paw, (he has been sucking for the last ten minutes); he stops sucking, and instantly turns his head in the direction of his paw; but this is perhaps because he has seen my hand, and the muscular sensation associated with this visual sensation may have determined his movement alone and almost automatically. I vary the experiment, however, and pass my finger two or three times running across his neck; he raises his head and looks behind him, as if understanding where I had touched him. However this may be, I should not like to affirm in him the faculty of localising pleasure or pain, except as a sort of automatic localisation of sensations, which would be the result of certain anterior *adaptations*.

The mother is engaged on the toilet of Mitis, who neither looks pleased nor displeased; he makes a sound which is neither a cry of pain, nor the whining of complaint or anger; if he is giving expression to a mental condition well defined to himself, I cannot guess at it. It is a tremulous noise which might be represented by the following letters: *m r r r i m r . . .*

2nd June.—Riquet's ears grow more than those of Mitis. The hair of the latter has ceased to grow, and his tail is scarcely more bushy than his brother's. He will not be more of an Angora than Riquet, in spite of the long silky hair, which during the first days grew so abundantly on his neck, stomach, and thighs.

Riquet has become more patient, and Mitis more lively during the last few days. It would be very presumptuous to pretend to found precise inductions as to the future on observations taken during the first days; hypothesis itself must maintain the most scrupulous reserve, especially as regards predictions concerning intelligence and character. A cat which appears very intelligent at the age of one or two months, often shows very mediocre intelligence when a year or two old, and *vice versâ*. As to the colour and nature of the hair, six weeks must have elapsed before one can give any certain opinion as to the real shade that it will be, and as to its flexibility, abundance, brilliancy, and waviness. As for the ears I have often erred in my predictions. . . . which are scarcely perceptible at birth, and during the first eight or ten days, will sometimes grow to a disproportionate length afterwards. With regard to the paws and the tail, half a *decimètre's* length at the moment

of birth indicates undoubtedly an appreciable length later on. One can also determine on the first day the future firmness of the muscles and bones by the relative resistance of these little velvety lumps when held in the hand. A strong voice, which is more especially the appendage of male kittens, indicates at any rate good lungs.

Mitis, who is so gentle, has more flattened ears than Riquet; the latter's stand up more like those of foxes and wolves. The little complementary *pavillion* . . . which is attached to both edges of the ear, slightly towards the bottom, and which in man is designated by a slight rudimentary excrescence, is beginning to appear in both my kittens.

They are now well advanced in the art of play; they fence well with their paws, lick each other, and tumble and roll each other over. Riquet, who has some difficulty in standing upright on his legs, has attempted a jump. They try to bite each other at play, specially aiming at each other's paws. Often by mistake they seize their own paws with their teeth and gnaw at them; but they are not long in finding out their error.

I place them on the ground. They tremble, seem frightened, or rather astonished, or undecided, and make a few uncertain movements. One of them perceives the mother at a distance

of about a *mètre*, looking at them from under a chair. He goes straight up to her, but very slowly, and with a great deal of waddling; all of a sudden he stops. He has heard his brother's voice, the latter having whined on my touching him to rouse him out of his persistent immovability; he turns his head in our direction, distinguishes me, turns straight round, and comes up to me with much greater rapidity and assurance than he had shown in going to his mother. The reason of this is, that the road to me was shorter and surer, and the stimulus to traverse it greater, owing to the larger proportions of my body. I place them back in the box, and they begin playing again with zest. The one who had only moved feebly on the floor, walks, and even jumps, much better this morning. This little outing seems to have stimulated him to an effort which he had not made before. In like manner we sometimes note progress in young children from day to day.

They can now climb up to the middle of the box.

A board, a few *centimètres* wide, is nailed to the top of the box, and covers about a fourth part of it. Mitis looks at it with longing eyes; he makes up his mind, draws himself up as erect as he can, stretches up his paws to the partition and within five *centimètres* of

the upper plank ; he is longing to make an upward leap, and finally he ventures on it ; but his heavy abdomen and his weak legs play him false, and he rolls over ignominiously. In like manner a young child, not yet firm on his legs, leaving the support of the chair to venture a step alone, falls in a soft heap on the floor.

4th June.—They play more and more with my finger, bite at it and lick it. They seem to look at all objects more attentively, and more sympathetically at their mother and me.

When they are playing about under their mother, one sees only a confusion of white paws, pink noses, shining eyes, and whisking tails. I have put them on my bed. They walk much better there than in the box, and infinitely better than on the floor ; they studied everything in this new locality, walking, climbing up and down, sliding and rolling about. Riquet, having reached the edge of the bed, would have fallen over if I had not held him back. His more circumspect brother, finding himself in the same situation, leant his head over for a moment, and then, as if defying a danger more or less realised, turned round and precipitated himself at the other side of the bed.

11th June.—They frisk and bound about,

and catch at all objects indiscriminately with their claws to try and climb. They look into each other's eyes as if trying to discover the expression of sentiments and ideas. This may proceed from astonishment and curiosity, and the delight of the ever new impressions which the movement of the eyes cannot fail to produce in them. But must it not also be partly the result of an hereditary predisposition of their organisation, which leads them to seek in the eyes for the meaning which they express? We know that adult animals, as well as man, are endowed with this tendency which proceeds from instinct rather than individual experience.

Partly from imitation of their mother and sister, partly from the teaching of their instinct, they went off one day to a certain out-of-the-way spot, where was placed a pan full of ashes, the object of which does not require to be explained. Observing this, I carried them from time to time to this pan. The smell proceeding from it was in itself sufficient to excite them to satisfy their needs. Three or four such experiences sufficed to associate with the idea of this smell the idea of the pan, of the place where it was, and of the need to be satisfied. I do not say that this habit of cleanliness, so quickly acquired, may not as quickly be lost, by means of new associations

taking the place of the first. There is no doubt, however, that if the people would make it a rule to watch over the formation of habits in cats during the first weeks (and probably also in other animals and in children), it would not afterwards be necessary to have recourse to a system of barbarous, and often useless measures, in order to obtain from them by violence that which nature will manage alone with but very slight assistance.

The shutters are closed on account of the extreme heat, so that the room is in semi-darkness, and all the objects in it steeped in mysterious shadow. Riquet, frisking about at a little distance from the box, sees a footstool at about a *mètre's* distance. This object, with its four feet and their shadows would easily produce in my mind the illusion of some mysterious animal. This, however, cannot be the case with the kitten, unless we suppose in it a mental confusion of the inanimate with the animate, that is to say, the animalisation of the inanimate. My opinion is that the surprise, and presently, too, the terror which Riquet manifests, and which keeps him transfixed to the spot, have their origin rather in a certain indeterminate tendency to fear in the presence of all sudden and unusual impressions. Such an apparition would have had no effect whatever on him a few days ago ;

but to-day it is so much out of harmony with his now numerous experiences, that it contradicts and jars against all his familiar habits. This is, in my mind, the sole cause of his terror. However it may be, he draws himself up on his small paws, bristles his tail, humps up his back, and without either retreating or advancing, sways right and left in the same attitude. I make a movement; this noise brings his paroxysm of fear to a crisis, and he gives expression to it by a fretful *fû*; he then turns round and goes off as fast as his legs will carry him, the first way that comes, which happens to be to the side of the bed.

12th June.—They are attracted by the noise which I make in crumpling paper, in scratching the wall, or tapping a piece of furniture; but metallic sounds, if soft, do not have the same effect on them; the noise of objects being knocked, dull heavy sounds, or the noise of sharp voices, astonish them and make them prick up their ears, but not lift their paws. They take pleasure, however, in all the noises which they make themselves, provided they are not too reverberating, or caused by the displacement or fall of some large object. The loudest voice that I can put on pleases them almost as much as the little playful tones I generally address them in; they also delight

in the strings of articulated consonants, which I repeat to them; but they do not like whistling, although they are not so much annoyed by it as is their mother, who comes up to me and rubs her head under my chin and over my mouth, and gives me little taps on my lips with her paw directly she hears me whistling. What specially delights them are the dry sounds which their claws make on wood, linen, paper, the straw seats of chairs, and the covering of the bed.

Mitis has drunk some milk this morning for the first time. I put the tip of my finger, moistened with this fluid, under his nose, and he licked it several times running. Enticed by the smell, he dipped his nose into a cup of milk, but did not know how to set about drinking; up came the mother and took his place, as if the milk was her rightful property. She generally tries to take away from her little ones anything fresh, when it is first given to them, perhaps out of maternal precaution, not thinking them strong enough to digest anything but her milk. As she laps in a great hurry, she always spills a certain quantity of milk round the saucer. I placed Mitis in front of what had been spilled, and whether by chance, or because he was incited by the smell, he fell to licking and cleaned it all up. A quarter of an hour later he drank

out of the cup, very awkwardly however, and very little, plunging his nose so far into the milk as to make him sneeze.

Riquet, to whom the same advances were made, licked the tip of my finger, but did not touch the milk in the cup. He is less strong than Mitis, and possibly less precocious in this respect.

When I come back into the room after an absence of even half an hour, the mother raises herself on her paws, as if moved by a spring, and her two satellites with her,—all at the same instant and with the same movement.

They still continue to be very fond of us, and not to be startled by strangers.

I have tried to make Riquet drink: I put his nose into the milk, and he then dipped his paw in himself and licked it, but would not lap. He went so far as to approach the cup with his nose and just touch it with his lips, but he then started off again.

He is now under the chimney, sniffing and then scratching the ashes, which, as his movements indicate, remind him of his ash-pan. If I once or twice tolerated an infraction of my rule, the habit of cleanliness so easily formed in him would perhaps be hopelessly lost; this is why I hasten to carry him to his pan.

At 3 o'clock we repeated with Riquet the experiment which had failed in the morning ; we smeared his nose with milk. He then licked it, and afterwards put his nose in the cup, and drank a good teaspoonful.

This morning they are more vigorous and nimble than yesterday, and they have been disporting themselves on my bed for more than an hour, whilst their mother and elder sister were engaged, by way of recreation, in snatching tufts of hair from each other's coats, in scratching and throttling each other. The mother gives a cry to indicate that this sport has reached its limits. Mitis has tumbled off the bed with affright, uttering a plaintive cry.

A ludicrous incident very nearly parted me from my two little pets. An old laundress, whose sight is very feeble, as well as her mind, shut them up in her bundle of linen, on which they had been playing whilst she was counting it. I gave them up for lost, having searched for them everywhere, even in my boots. Three hours later they were brought back to me safe and sound. This is what had happened : on opening the bundle, out walked a kitten (Mitis) who seemed very much surprised, he was put in a basket with a cup of milk beside him ; the other was only found an hour later, to the great astonishment of

the laundress, squatting under a cupboard and showing nothing but the tip of his nose. He refused all manner of consolation, and would not touch the milk, in spite of the example of Mitis who did not wait to be pressed.

As soon as they were safe back with me they both ate some bread soaked in milk.

The mother was very much dejected by their absence. When, after calling them in vain with her most caressing voice, and making pretence to play to entice them to come to her, she became convinced of their absence, she filled my rooms with agonised screams. She then begged to be let out to look for them in the court-yard, but soon came in again and began screaming and hunting about as before. She came up to me and got up on my knees, looked me fixedly in the eyes, and then curled herself up on the bed where the kittens often sleep with her. Her eyes went beyond the expression of profound despair; her eyelids quivered, a slight moisture covered the eyeballs, and at the inside corners there was the appearance of tears. There is no doubt that cats cry.

I have several times noticed, but in a specially distinct manner to-day, on lifting them away from any place where they are comfortable, an instinctive, or perhaps intentional, tendency

to lean either with the stomach or the paws, in order to remain fixed to the spot. An analogous movement may be noticed in young children, when one tries to take them out of the arms of some one they are fond of. I might no doubt have observed this fact in my kittens long ago.

I was holding Mitis in my hands, and I lifted him near to his mother and Riquet; he made a precipitate movement to get down to them, instinct urging him to spring—and that all the more since he is now stronger;—but his experience and his strength not sufficing to enable him to adapt his efforts to the distance he had to cross. Thus it is that falling from the bed often means in his case a bad attempt at jumping down. It is also possible that it is the example of his mother and big sister, as much as his increased strength, which suggests these somewhat impulsive bounds, which moreover belong to the organic habits of the species. The little unfledged bird also falls from its nest, when attempting a premature flight.

Nothing in the shape of food comes amiss to Riquet: soup, meat, potatoes, pease, lard—he snaps at, and devours whatever he comes across and whatever is offered him; but one must beware of the little glutton's sharp claws. Mitis takes his food more gently.

18th June.—Riquet is playing with me on the sofa. A sole is placed on the table. The smell of the fish excites and puzzles him, for he does not know whence it comes; he travels over me in all directions, trying to follow the scent, and is soon perched up on my left shoulder, which is tolerably close to the table; he works towards the table, and I stoop my shoulder to let him slide on to it. He rubs his nose first against a spoon and then against a glass; the plate containing the sole is only a *decimètre* from the glass, but as he does not know that a plate contains food, and that it is from there that the savoury smell proceeds, he does not direct his steps towards it. Finally, however, he finds himself in front of the plate, puts his four paws on it, and instantly disposes himself to eat the whole fish. I instantly carry him off. What a small number of experiences he will need (two or three only I have determined) in order to adapt to actual practice these judgments and movements which unite instinctively with certain sensations! We call this *reasoning* in man, and, nevertheless, it closely resembles a piece of subjective mechanism, which is blind at starting, and which adapts itself to objective representations with such promptitude, that consciousness seems to follow, not to precede, its operations.

Whilst I was at my breakfast they climbed up my legs, and I had the weakness to let them stay for a moment on the table. They invaded my plate, Mitis going so far as to bite into the fish, and Riquet licking and gnawing the edge of the plate; the smell of the fish is so penetrating that he confuses it with the plate. Moreover, he has no idea of *containing* and being *contained*. Soon he comes across a mouthful of fish which I have prepared for him: he flattens himself out on the plate, and eats with courageous and deliberate precipitation, inclining his head now to the left, now to the right, sometimes closing his eyes from delight, but oftenest keeping them open and fixed attentively on the plate,—one would say he was afraid of losing his precious morsel; and here we see a result of the preservative instinct which he has received from his ancestors.

Mitis has got into a round earthen pan, and from association of impressions tries to satisfy a need which he would not otherwise have felt. The vessel, however, being small, and his movements causing it to totter, he jumped out and ran off to his own pan.

20th June.—Mitis suddenly springs from the table to the floor, first feeling his mother with the end of his paw, and then passing over her without touching her: is it a personal

or a social motive which makes him act thus? Does he wish to avoid walking on ground that is not firm, or is he trying not to hurt his mother? In like manner will a horse, on the point of trampling a live body, hastily withdraw his foot.

They have been playing for a long time on my bed; before I go to sleep I shall carry them to their own bedroom, to their mother who awaits them somewhat sadly. They came back into my room as soon as I did myself. I sit down in front of my table, they climb up along my legs, and I determine to place them back on my bed. Twenty minutes later I reinstate them a second time in their domicile, but they do not stay there two minutes. I had just got into bed again when back they come, spring at the bed-cover, the chairs, the wall, with a noise of scratching and rustling which excites them to continue their difficult ascent; at the end of two minutes the siege is accomplished, and I am seized upon, trodden over, scratched and gnawed. I cannot be master in my own room except by shutting the door, at which, however, they come and scratch, but without much persistence.

So there they are, now pretty well masters of their movements, taking headers to get down from the bed to the chair, from the

chair to the floor, climbing up along the curtains and the tapestry, and even attempting to climb the furniture and polished objects. A few more days and their mode of descending will be less like tumbling, their ascents less like scrambling: they will spring and they will bound, and will be real individual cats.
